



DRILL LAYER · 300 QUESTIONS · FIVE MOCK INTERVIEWS

AWI 300: The Technical Question Bank

Three hundred finance interview questions with spoken answers, the logic behind them, follow-ups and the mistake to avoid. Accounting, valuation, DCF, M&A, LBO, credit, mental maths and curveballs.

How to use this document

This is the drill layer of the AWI curriculum. The twelve guides teach the concepts; this bank tests whether you can produce them in 45 seconds under questioning and survive the follow-up. Every entry points to the guide section that explains it, so a wrong answer has an immediate next step.

Work in order within a section: questions run from Core to Curveball, so the point where you start failing is a measure of where your preparation ends. Say every answer out loud, timed. Numerical questions earn no credit for a right number without a spoken method. Appendix A gives five timed mock interviews drawn from the bank; Appendix B gives the must-know set for each role.

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A note on conventions

Worked answers use a 25% tax rate unless the question states otherwise, and U.S. GAAP with IFRS differences flagged where they change the answer. Interest is calculated on opening balances in timed exercises. Say the tax assumption out loud in an interview; it is the first thing an interviewer will test.

Accounting: the statements (1–10)

Every entry has the same seven parts. The answer is sized to be spoken in 30 to 45 seconds. If you cannot say it in that time, you do not know it yet.

1 Walk me through the three financial statements.

Core · All roles · Guide 01 §1.1

Answer

The income statement shows revenue, expenses and profit over a period. The balance sheet shows what the company owns and owes at a point in time, with assets equal to liabilities plus equity. The cash flow statement starts from net income, reverses non-cash items, adjusts for working capital, then adds investing and financing flows to show how cash actually changed.

Why it is right. Each statement answers a different question: profitability, financial position, and cash. The order matters because the cash flow statement is derived from the other two.

Follow-ups. How are they linked? Which one would you keep if you could only have one? Why is the income statement not enough?

Common mistake: reciting line items rather than saying what each statement is for. The interviewer wants the purpose, then the mechanics.

2 Walk me through the income statement from revenue to net income.

Core · All roles · Guide 01 §1.2

Answer

Revenue less cost of goods sold gives gross profit. Less operating expenses, such as SG&A, research and development, and depreciation and amortisation, gives operating income or EBIT. Less net interest gives pre-tax income. Less tax gives net income. EBITDA is EBIT with depreciation and amortisation added back, and it often has to be found from the cash flow statement because D&A is buried in COGS and opex.

Why it is right. The structure separates operating performance, which is before interest, from financing and tax, which depend on the specific company's structure.

Follow-ups. Where does depreciation sit? What is the difference between EBIT and operating income? Why do analysts stop at EBITDA?

Common mistake: putting interest above EBIT, or treating EBITDA as a line on the statement. It is a derived figure.

3 What are the three sections of the cash flow statement, and what sits in each?

Core · All roles · Guide 01 §1.3

Answer

Operating: net income, plus non-cash charges such as depreciation, amortisation, stock compensation and impairments, less non-cash gains, plus or minus changes in working capital. Investing: capital expenditure, acquisitions, asset sales and purchases of investments. Financing: debt raised and repaid, shares issued and bought back, and dividends. The three sum to the change in cash.

Why it is right. The sections separate cash the business generates from cash it invests and cash it exchanges with capital providers, which is exactly how an investor reads it.

Follow-ups. Where does interest paid go? Where do lease payments go? Why can operating cash flow exceed EBITDA?

Common mistake: forgetting that under IFRS interest paid may be classified in operating or financing, whereas U.S. GAAP puts it in operating.

4 How are the three statements linked?

Core · All roles · Guide 01 §1.6

Answer

Net income from the income statement is the first line of the cash flow statement and flows into retained earnings on the balance sheet. Non-cash items and changes in balance sheet accounts reconcile net income to cash. The ending cash on the cash flow statement is the cash on the balance sheet. Depreciation reduces PP&E and capex increases it; the debt balance drives interest expense.

Why it is right. Every cash flow line is either an income statement item or a change in a balance sheet account, so the three form a closed system.

Follow-ups. Walk a \$10 change in depreciation through. What happens to retained earnings when a dividend is paid?

Common mistake: saying "net income links to cash" without saying what adjusts it. The adjustments are the link.

5 If you could have only one statement, which and why?

Core · All roles · Guide 01 §1.5

Answer

The cash flow statement, because it shows what the business actually generates and spends, which is what pays debt and what an owner receives. The income statement is full of non-cash items and estimates. A defensible alternative is the balance sheet in a distressed situation, because it shows what creditors can recover.

Why it is right. Value and solvency both depend on cash. The interviewer wants a choice and a reason, not a survey.

Follow-ups. What can you not learn from the cash flow statement alone? When would you pick the balance sheet?

Common mistake: picking the income statement. Profit is an opinion; cash is a fact.

6 If you could have only two, which and why?

Intermediate · IB, PE · Guide 01 §1.4

Answer

The income statement and the balance sheet, at the start and end of the period. With those I can rebuild the cash flow statement, because every cash flow line is either an income statement item or the change in a balance sheet account.

Why it is right. The cash flow statement is derived; the other two contain the primary information. This is also how a modelling test builds it.

Follow-ups. Rebuild operating cash flow from those two. What if you only had one balance sheet?

Common mistake: choosing the cash flow statement and the income statement, which cannot regenerate the balance sheet.

7 What is EBITDA and why is it used?

Core · All roles · Guide 02 §2.5, Guide 04 §2.1

Answer

Earnings before interest, tax, depreciation and amortisation: operating profit with the non-cash charges for using assets added back. It is used as a rough proxy for operating cash generation and because it is independent of capital structure, tax jurisdiction and depreciation policy, which makes companies comparable and makes it the base for leverage multiples.

Why it is right. Lenders and buyers want a measure of the business, not of how it happens to be financed or depreciated.

Follow-ups. Why is it not cash flow? Why did Buffett call it misleading? When would you prefer EBIT?

Common mistake: treating EBITDA as cash flow. It ignores capex, working capital, interest and tax.

8 Why is EBITDA not free cash flow?

Core · PE, Credit · Guide 01 §9 quick-fire

Answer

Because four real cash outflows sit below it: capital expenditure, investment in working capital, cash interest and cash taxes. A company with \$100m of EBITDA, \$40m of capex, \$10m of working capital growth, \$25m of interest and \$10m of tax has \$15m of free cash flow. Lenders and sponsors are paid from the \$15m, not the \$100m.

Why it is right. EBITDA measures operating earnings before the claims on them. Free cash flow measures what is left.

Follow-ups. Which of the four is most often underestimated? What is cash conversion, and what is a good level?

Common mistake: forgetting working capital. Growing businesses consume cash in receivables and inventory even when profitable.

9 Depreciation rises by \$10. Walk it through all three statements.

Core · All roles · Guide 01 §2.1 · Numerical

Answer

Income statement: pre-tax income falls \$10, tax falls \$2.50, net income falls \$7.50. Cash flow: start with net income down \$7.50, add back the \$10 of depreciation, so cash rises \$2.50. Balance sheet: cash up \$2.50, PP&E down \$10, so assets down \$7.50; retained earnings down \$7.50. It balances.

Why it is right. Depreciation is non-cash, so its only cash effect is the tax it saves.

Follow-ups. Why does cash go up? What if the depreciation is not tax deductible? What happens in a DCF?

Common mistake: saying cash falls because "an expense went up." The routine is income statement, then cash flow, then balance sheet, every time.

10 If depreciation is non-cash, why does it change cash?

Core · All roles · Guide 01 §1.8

Answer

Because it is tax deductible. Depreciation reduces taxable income, so the company pays less cash tax. At a 25% rate, \$10 of extra depreciation saves \$2.50 of cash. The depreciation itself never leaves the bank account; the tax it avoids does.

Why it is right. The cash effect of any non-cash expense is exactly its tax shield.

Follow-ups. What if book and tax depreciation differ? What is the effect on a DCF?

Common mistake: answering "it doesn't change cash." The tax shield is the point of the question.

Accounting: walkthroughs (11–31)

Use a 25% tax rate unless the question says otherwise. State the tax assumption out loud; interviewers reward it.

11 A \$100 asset write-down, tax deductible. Walk it through.

Intermediate · All roles · Guide 01 §2.4 · Numerical

Answer

Income statement: a \$100 charge, net income down \$75. Cash flow: net income down \$75, add back the \$100 non-cash write-down, cash up \$25. Balance sheet: the asset down \$100, cash up \$25, so assets down \$75; retained earnings down \$75.

Why it is right. Same logic as depreciation: a non-cash charge whose only cash effect is the tax saved.

Follow-ups. What if it is not deductible? What happens to leverage ratios? Is a write-down a signal about management?

Common mistake: assuming deductibility without saying so. Many write-downs, including goodwill, are not deductible when booked.

12 The same write-down, not tax deductible. What changes?

Advanced · PE, PM · Guide 01 §2.4 · Numerical

Answer

Two cases. If it is never deductible, like goodwill impairment, net income falls the full \$100 and cash is unchanged: the write-down is added back in full and no tax is saved. If it is deductible later, when the asset is sold or scrapped, book tax expense still falls \$25 and a deferred tax asset of \$25 is created, so net income falls \$75 while cash is still unchanged.

Why it is right. Book tax follows book profit; cash tax follows the tax rules. Deferred tax reconciles the two.

Follow-ups. What is a deferred tax asset? Which write-downs are typically non-deductible?

Common mistake: showing a cash increase of \$25 with no deduction. No deduction means no cash tax saved.

13 Sell an asset with a book value of \$500 for \$600 in cash. Walk it through.

Intermediate · IB, PE · Guide 01 §2.5 · Numerical

Answer

First I would confirm the book value, because the income statement records only the gain. Gain of \$100, net income up \$75. Cash flow: net income up \$75, subtract the \$100 non-cash gain in operating, then \$600 of proceeds in investing, so cash up \$575. Balance sheet: cash up \$575, PP&E down \$500, assets up \$75; retained earnings up \$75.

Why it is right. The gain is already in net income, so the proceeds must be shown in investing without double counting.

Follow-ups. What if it sold for \$400? Why does the gain get subtracted in operating?

Common mistake: booking the full \$600 as revenue or showing the \$100 gain in investing.

14 Buy \$100 of equipment on 31 December with debt at 10%, five-year life. Walk through year 1 and year 2.

Intermediate · All roles · Guide 01 §2.2 · Numerical

Answer

Year 1: no income statement effect, since no depreciation or interest has accrued. Cash flow: capex of \$100 in investing, debt of \$100 in financing, no net change. Balance sheet: PP&E up \$100, debt up \$100. Year 2: depreciation \$20 and interest \$10 reduce pre-tax income by \$30, net income down \$22.50. Cash flow: net income down \$22.50, add back \$20 of depreciation, cash down \$2.50. Balance sheet: cash down \$2.50, PP&E down \$20, retained earnings down \$22.50.

Why it is right. The year-1 timing is the test: buying on the last day means nothing has happened yet.

Follow-ups. What if it were bought on 1 January? What if funded with cash instead of debt?

Common mistake: recording a full year of depreciation in year 1.

15 That equipment is worthless at the start of year 3 and the loan is repaid. Walk it through.

Advanced · IB, PE · Guide 01 §2.3 · Numerical

Answer

Book value is \$80 after one year of depreciation. Income statement: an \$80 write-off, net income down \$60. Cash flow: net income down \$60, add back the \$80 non-cash charge, repay \$100 of debt in financing, so cash down \$80. Balance sheet: cash down \$80, PP&E down \$80, assets down \$160; debt down \$100, retained earnings down \$60, so liabilities and equity down \$160.

Why it is right. Two separate events, a write-off and a repayment, each with its own effect, combined on one balance sheet.

Follow-ups. Why is the tax saving \$20? What if the write-off is not deductible?

Common mistake: writing off \$100 instead of the \$80 book value.

16 Sell inventory that cost \$10 for \$20 in cash. Walk it through.

Core · All roles · Guide 01 §2.6 · Numerical

Answer

Income statement: revenue \$20, COGS \$10, pre-tax income \$10, net income \$7.50. Cash flow: net income \$7.50, plus the \$10 decrease in inventory, cash up \$17.50. Balance sheet: cash up \$17.50, inventory down \$10, assets up \$7.50; retained earnings up \$7.50.

Why it is right. The inventory reduction is a working capital release that adds to operating cash flow.

Follow-ups. What if the sale was on credit? What if the customer pays next quarter?

Common mistake: forgetting the inventory line and showing cash up by only \$7.50.

17 Buy \$100 of inventory for cash, then sell half at a 50% gross margin. Walk it through.

Advanced · IB, PE · Guide 01 §2.7 · Numerical

Answer

Half the inventory costs \$50, and at a 50% gross margin that means \$100 of revenue. Income statement: revenue \$100, COGS \$50, net income \$37.50. Cash flow: net income \$37.50, less the \$50 net increase in inventory, since I bought \$100 and used \$50, so cash down \$12.50. Balance sheet: cash down \$12.50, inventory up \$50, assets up \$37.50; retained earnings up \$37.50.

Why it is right. A 50% gross margin means cost is half of price, so \$50 of cost is \$100 of revenue.

Follow-ups. What if the margin were 20%? What if the inventory was bought on credit?

Common mistake: booking \$200 of revenue by applying the margin to the whole \$100 purchase.

18 Buy \$10 of inventory on credit. What happens?

Core · All roles · Guide 01 §2.8 · Numerical

Answer

Nothing on the income statement until it is sold. Cash flow: the \$10 increase in inventory reduces operating cash, the \$10 increase in payables adds it back, no net change. Balance sheet: inventory up \$10, accounts payable up \$10.

Why it is right. Inventory is an asset until sold; buying on credit creates a matching liability.

Follow-ups. What happens when the supplier is paid? What happens when the inventory is sold?

Common mistake: putting the purchase through COGS.

19 Issue \$200 of stock, then buy back \$50. Walk both through.

Core · All roles · Guide 01 §6.1–6.2 · Numerical

Answer

Issuance: no income statement effect. Financing cash in of \$200. Cash up \$200, equity up \$200. Buyback: no income statement effect. Financing cash out of \$50. Cash down \$50, equity down \$50, shown as treasury stock or a reduction in share capital depending on the jurisdiction.

Why it is right. Transactions with owners never touch the income statement.

Follow-ups. What happens to EPS after the buyback? Does the buyback change enterprise value?

Common mistake: recording a gain or loss on the buyback.

20 Declare a \$40 dividend but do not pay it yet. What changes?

Intermediate · IB, PM · Guide 01 §6.3 · Numerical

Answer

No income statement effect and no cash movement yet. Retained earnings fall \$40 and a dividend payable liability of \$40 appears. When paid, cash and the liability both fall \$40, shown in financing.

Why it is right. Declaration creates a legal obligation; payment settles it.

Follow-ups. Is a dividend an expense? Are dividends tax deductible for the company?

Common mistake: reducing cash at declaration.

21 A customer prepays \$120 for twelve months of service. Walk through the prepayment and the position after one month.

Intermediate · GE, PM · Guide 01 §6.4 · Numerical

Answer

At prepayment: cash up \$120, deferred revenue up \$120, no income statement effect.
After one month: revenue \$10, net income \$7.50, deferred revenue falls to \$110. On the cash flow statement, net income of \$7.50 less the \$10 reduction in deferred revenue gives cash down \$2.50, which is the tax paid. Cumulatively, cash is up \$117.50, deferred revenue \$110 and retained earnings \$7.50.

Why it is right. Cash arrives first; revenue is earned over the service period.

Follow-ups. Why is deferred revenue attractive to investors? What happens to it in an acquisition?

Common mistake: recognising the \$120 as revenue on receipt.

22 Record a \$30 bad debt provision. Walk it through, deductible and not.

Advanced · Credit, PM · Guide 01 §6.5 · Numerical

Answer

Deductible: expense \$30, net income down \$22.50. Cash flow: net income down \$22.50, add back the \$30 non-cash provision, cash up \$7.50. Balance sheet: net receivables down \$30 through the allowance, cash up \$7.50, retained earnings down \$22.50. Not deductible until written off, which is common: net income down \$30 with a deferred tax asset if the deduction comes later, and cash unchanged.

Why it is right. The provision reduces receivables through a contra account; its cash effect depends entirely on deductibility.

Follow-ups. What happens when the debt is actually written off? How can provisions be used to manage earnings?

Common mistake: reducing cash by \$30. No cash has moved.

23 Write inventory down from \$40 to \$25. Walk it through.

Intermediate · All roles · Guide 01 §6.6 · Numerical

Answer

A \$15 charge in COGS, net income down \$11.25. Cash flow: net income down \$11.25, add back the \$15 non-cash write-down, cash up \$3.75. Balance sheet: inventory down \$15, cash up \$3.75, assets down \$11.25; retained earnings down \$11.25.

Why it is right. Inventory is carried at the lower of cost and net realisable value; the write-down is a non-cash charge.

Follow-ups. Can it be reversed later? Where does the charge sit, COGS or opex?

Common mistake: showing cash falling by the write-down.

24 Record \$60 of stock-based compensation. Walk it through, including the equity lines.

Advanced · GE, PM · Guide 01 §6.7 · Numerical

Answer

Expense \$60, net income down \$45. Cash flow: added back in full as non-cash, so cash rises \$15 from the tax deduction, if available. Balance sheet: cash up \$15; within equity, paid-in capital up \$60 and retained earnings down \$45, so equity up \$15. It balances.

Why it is right. The company pays employees with shares rather than cash, so the expense is matched by an increase in paid-in capital.

Follow-ups. Is it a real cost? Should it be added back to EBITDA? How does it affect the share count?

Common mistake: treating it as free because it is non-cash. It dilutes existing shareholders.

25 The company capitalises \$50 of development it previously expensed. What happens to operating cash flow and to free cash flow?

Advanced · GE, PM · Guide 01 §6.8 · Numerical

Answer

Expenses fall \$50, so net income rises \$37.50. The \$50 moves from operating to investing as capex, so operating cash flow rises by \$50 while total cash actually falls \$12.50 because of the extra tax paid. Free cash flow, which subtracts capex, falls by that \$12.50. Balance sheet: intangible assets up \$50, cash down \$12.50, retained earnings up \$37.50.

Why it is right. Nothing about the business changed. Reported profit and operating cash flow both improved through classification.

Follow-ups. Under which framework is capitalising development more common? How would you spot it in the accounts?

Common mistake: concluding that the company generates more cash. It generates less, after tax.

26 Factor \$100 of receivables for \$95 in cash. Walk it through, and say when it is really debt.

Advanced · Credit, PE · Guide 01 §6.9 · Numerical

Answer

A \$5 financing cost, net income down \$3.75. Receivables fall \$100 and cash rises about \$96.25 after the tax effect. If the factoring is without recourse, the risk has genuinely transferred and receivables leave the balance sheet. If it is with recourse, the company still bears the credit risk, so it is a secured borrowing: the receivables stay and \$95 of debt appears.

Why it is right. Substance over form. Selling a receivable and borrowing against it look the same in cash and different in risk.

Follow-ups. How would you spot factoring in the accounts? What does it do to days sales outstanding?

Common mistake: praising a falling DSO without checking whether receivables were sold.

27 Issue a \$100m PIK note at 10%. What happens after one year?

Advanced · PE, Credit · Guide 01 §2.10 · Numerical

Answer

At issuance: cash up \$100m in financing, debt up \$100m. After one year: interest expense of \$10m, net income down \$7.5m. Cash flow: net income down \$7.5m, add back the \$10m of non-cash PIK interest, so cash up \$2.5m from the tax saving. Balance sheet: debt up \$10m as the interest accrues to principal, cash up \$2.5m, retained earnings down \$7.5m.

Why it is right. PIK interest is a real expense paid in more debt rather than cash; its cash effect is only the tax shield.

Follow-ups. Is PIK interest deductible? What does a switch to PIK signal? What is the balance after three years?

Common mistake: showing cash down \$10m. Nothing was paid.

28 Repurchase \$100 of debt for \$80 in cash. Walk it through.

Advanced · Credit · Guide 01 §2.11 · Numerical

Answer

A \$20 gain on extinguishment, net income up \$15. Cash flow: net income up \$15, subtract the \$20 non-cash gain in operating, \$80 outflow in financing, cash down \$85. Balance sheet: cash down \$85; debt down \$100 and retained earnings up \$15, so liabilities and equity down \$85.

Why it is right. Retiring a liability for less than its carrying value is a gain, but the cash spent is a financing outflow.

Follow-ups. Why would debt trade at 80? Is the gain taxable? What does this do to leverage?

Common mistake: putting the \$80 in operating cash flow.

29 Issue bonds with a face value of \$80 for \$100 in cash. Is there a gain?

Advanced · Credit, IB · Guide 01 §2.12 · Numerical

Answer

No. The bonds were sold at a premium, probably because the coupon is above market rates. Cash rises \$100 and the liability is recorded at \$100, the \$80 of face value plus a \$20 premium. The premium is amortised over the bond's life, which reduces interest expense below the cash coupon each year.

Why it is right. A company cannot earn a profit by borrowing. The extra cash is compensation for an above-market coupon.

Follow-ups. What is the effective interest rate? What happens if bonds are issued at a discount?

Common mistake: booking a \$20 gain at issuance. Some prep materials show exactly that, and it is wrong.

30 A truck costs \$20,000 with a ten-year life. After two years its market value is \$19,000. What is it on the balance sheet under GAAP and under IFRS?

Intermediate · All roles · Guide 01 §2.13 · Numerical

Answer

\$16,000 under U.S. GAAP: cost less two years of \$2,000 straight-line depreciation. Assets are not written up when market value rises. Under IFRS the company could elect the revaluation model and carry it at fair value, with the increase going to other comprehensive income, but most companies use the cost model and would also show \$16,000.

Why it is right. Historical cost is the default; upward revaluation is an IFRS option, not a requirement.

Follow-ups. What if the market value were \$10,000? What if it were scrapped after two years?

Common mistake: answering \$19,000 because "that is what it is worth."

31 Goodwill of \$200 is impaired by \$50, not tax deductible. What happens to net income and cash?

Intermediate · IB, PM · Guide 01 §6.11 · Numerical

Answer

Net income falls the full \$50 with no tax benefit. Cash is unchanged: the \$50 is added back as a non-cash charge on the cash flow statement. Goodwill falls to \$150 and retained earnings fall \$50.

Why it is right. Goodwill impairment is an accounting admission of overpayment; it has no cash consequence.

Follow-ups. Does it affect covenants? What does it tell you about the acquisition?

Common mistake: applying a tax saving to an impairment that is not deductible.

Accounting: working capital and cash (32–40)

32 What is working capital, and which definition do you use in a model?

Core · All roles · Guide 01 §3.1

Answer

Current assets less current liabilities. In a model I use operating working capital, which excludes cash and debt: receivables, inventory and prepayments, less payables and accruals. That isolates the cash tied up in running the business from how it is financed.

Why it is right. Cash and debt are financing items. Including them in working capital double-counts them in a valuation bridge.

Follow-ups. Why is an increase a use of cash? What is a working capital peg?

Common mistake: giving the textbook definition and then including cash when asked to calculate the change.

33 Is an increase in receivables a source or a use of cash? Payables?

Core · All roles · Guide 01 §3.2

Answer

An increase in receivables is a use of cash: the company has booked revenue it has not collected. An increase in payables is a source: it has received goods it has not paid for. The general rule is that an increase in an operating asset uses cash and an increase in an operating liability provides it.

Why it is right. Net income counts revenue when earned; the cash flow statement corrects for what was actually collected or paid.

Follow-ups. What about deferred revenue? What about a decrease in inventory?

Common mistake: getting the sign right for receivables and wrong for payables under pressure. Say the rule, then apply it.

34 Receivables rise \$30 and payables rise \$10. What is the net effect on operating cash flow?

Core · All roles · Guide 01 test · Numerical

Answer

Operating cash flow is \$20 lower than net income implies: minus \$30 for the receivables, plus \$10 for the payables.

Why it is right. Both are working capital movements; they net.

Follow-ups. Is that good or bad? What would you want to know about the receivables?

Common mistake: adding rather than netting, or reversing the sign on payables.

35 Revenue is \$365m and receivables are \$45m. What is DSO?

Core · All roles · Guide 01 §3.6 · Numerical

Answer

Forty-five days: receivables divided by revenue, times 365. The company collects from customers about six and a half weeks after sale on average.

Why it is right. DSO converts a balance into the number of days of sales it represents.

Follow-ups. Is 45 days good? What if DSO is rising while revenue is flat? Should you use year-end or average receivables?

Common mistake: dividing by COGS, which is the denominator for inventory and payables days.

36 DSO is 40, DIO is 50 and DPO is 60. What is the cash conversion cycle, and what does it mean?

Intermediate · PE, Credit · Guide 01 §3.7 · Numerical

Answer

Thirty days: 40 plus 50 minus 60. On average, the company pays for inputs about thirty days before it collects cash from the customer, so each dollar of sales ties up a month of funding. A shorter cycle means less cash tied up; a negative cycle means suppliers and customers fund the business.

Why it is right. The cycle measures the gap between cash out to suppliers and cash in from customers.

Follow-ups. How would you shorten it? Which lever is most within management's control?

Common mistake: adding DPO instead of subtracting it.

37 Why can negative working capital be attractive, and when is it dangerous?

Intermediate · PE, GE · Guide 01 §3.5

Answer

It means customers pay before the company pays suppliers, so growth generates cash rather than consuming it. Subscription businesses, supermarkets and airlines work this way. It becomes dangerous when growth stalls or reverses, because the float unwinds and the company faces a sudden cash outflow just as its business is weakening.

Why it is right. The float is a loan from customers and suppliers that is repaid the moment volumes fall.

Follow-ups. How would you lend to a negative working capital business? What happens in an acquisition?

Common mistake: treating negative working capital as unconditionally good.

38 A company is profitable but runs out of cash. How?

Core · All roles · Guide 01 §1.7

Answer

Profit is not cash. It could be tying up cash in receivables and inventory as it grows, spending heavily on capex, facing a debt maturity it cannot refinance, or paying a large one-off cash cost such as a legal settlement. Any of those can drain cash while the income statement still shows a profit.

Why it is right. All four sit below net income on the cash flow statement.

Follow-ups. Which is most common in a fast-growing company? How would you spot it coming?

Common mistake: giving one reason. The interviewer wants the pattern: growth, capex, debt, one-offs.

39 A company has had positive EBITDA for ten years and just went bankrupt. Explain.

Intermediate · Credit, PE · Guide 01 §1.7

Answer

Because EBITDA sits above the claims that actually cause default. Interest could exceed EBITDA after a rate rise or a leveraged recap. Maintenance capex could be consuming everything. A debt maturity could have arrived in a closed credit market. Or a one-off liability could have exceeded the cash available. Bankruptcy is a cash and maturity event, not an EBITDA event.

Why it is right. Solvency depends on cash flow after all fixed charges and on the ability to refinance.

Follow-ups. Which ratio would have warned you? What is refinancing risk?

Common mistake: answering only "too much debt" without explaining the mechanism.

40 Why might net income rise while operating cash flow falls?

Intermediate · PM, PE · Guide 01 §7.6

Answer

Working capital is absorbing cash, usually receivables or inventory growing faster than sales; non-cash gains are boosting income; or costs are being capitalised so they no longer pass through the income statement. It can also be a timing effect on tax. The pattern over several years is what matters: cumulative operating cash flow should track cumulative net income.

Why it is right. The gap between the two is the definition of earnings quality.

Follow-ups. Which of those is most often fraud? Which is most often innocent?

Common mistake: assuming the gap is always a red flag. A fast-growing business can show it honestly for years.

Accounting: revenue and topics (41–55)

41 What is deferred revenue, and what is a contract asset?

Intermediate · GE, PM · Guide 01 §5.3

Answer

Deferred revenue is a liability recorded when a customer pays before the company delivers: the cash is in, the revenue is recognised later. A contract asset is the reverse: the company has performed and earned revenue but does not yet have an unconditional right to bill, so it records an asset distinct from receivables.

Why it is right. Both reconcile the timing of cash and performance under the revenue standard.

Follow-ups. Why do investors like deferred revenue? Why do they worry about rising contract assets?

Common mistake: calling deferred revenue an asset because "it is money we have."

42 When can a company recognise revenue? Give me the five steps.

Intermediate · All roles · Guide 01 §5.1

Answer

When control of the good or service transfers to the customer. The five steps: identify the contract, identify the separate performance obligations, determine the transaction price, allocate that price to each obligation, and recognise revenue as each obligation is satisfied, at a point in time or over time.

Why it is right. U.S. GAAP and IFRS now share this model, so it applies everywhere a candidate will interview.

Follow-ups. What is a performance obligation? Give an example of over-time recognition.

Common mistake: saying revenue is recognised "when cash is received." That is cash accounting.

43 Gross versus net revenue recognition: what decides it, and why does it matter?

Advanced · GE, PM · Guide 01 §5.2

Answer

Control decides it. If the company controls the good or service before it reaches the customer, it is the principal and reports the full amount as revenue with the cost in COGS. If it merely arranges the transaction, it is an agent and reports only its fee. It matters because a marketplace reporting \$200m of gross volume at a 3% margin looks nothing like the same business reporting \$24m of net revenue at 60%, though the cash is identical.

Why it is right. Revenue multiples make gross presentation flattering; the test is who bears inventory, pricing and fulfilment risk.

Follow-ups. Which African fintechs face this question? How do you compare two companies that present differently?

Common mistake: thinking who collects the cash decides it.

44 A software company sells a three-year licence with implementation and support for \$360,000 upfront. How much is revenue in year 1?

Advanced · GE, PM · Guide 01 §5.5 · Numerical

Answer

Far less than \$360,000. The price is allocated to three obligations at their standalone selling prices. If that were \$180,000 for the licence, \$60,000 for implementation and \$120,000 for support, year 1 revenue would be the \$180,000 licence on delivery, the \$60,000 of implementation as it is completed, and one-third of support, \$40,000: about \$280,000, with \$80,000 in deferred revenue.

Why it is right. Each obligation is recognised when or as it is satisfied, not when the cash arrives.

Follow-ups. What if the licence is access to hosted software rather than a right to use it? What sits on the balance sheet at year end?

Common mistake: recognising all of it, or dividing it evenly by three.

45 How is a long-term construction contract recognised, and where does it go wrong?

Advanced · IB, PM · Guide 01 §5.4

Answer

Over time, using a measure of progress, usually costs incurred as a share of total expected costs. A contract 40% complete on cost with a \$100m price recognises \$40m. Expected losses are recognised immediately and in full. It goes wrong because progress depends on management's estimate of total cost: an optimistic estimate pulls profit forward, and the correction arrives as a large loss late in the contract.

Why it is right. Revenue depends on an estimate, and estimates can be managed.

Follow-ups. What balance sheet line would warn you? Which industries?

Common mistake: describing the method without saying where the judgement sits.

46 Name five ways a company can flatter earnings.

Intermediate · PE, PM · Guide 01 §4.15

Answer

Aggressive revenue recognition, such as booking sales early or loosening credit terms. Capitalising costs that should be expensed. Lengthening asset lives to cut depreciation. Releasing provisions. Classifying recurring costs as one-offs. And in inventory accounting, a LIFO liquidation. The signs are earnings growing faster than cash and receivables growing faster than revenue.

Why it is right. Each shifts profit between periods or between the income statement and the balance sheet without changing cash.

Follow-ups. Which is hardest to detect? How does a quality of earnings report catch them?

Common mistake: listing the methods without the detection signals.

47 LIFO or FIFO when prices are rising: which gives higher profit, and which gives higher cash?

Intermediate · IB, PM · Guide 01 §4.1

Answer

FIFO gives higher profit, because the oldest, cheapest inventory flows into cost of goods sold. LIFO gives higher cash, because higher COGS means lower taxable income and lower cash taxes. LIFO gives a more current income statement and a stale balance sheet; FIFO the reverse.

Why it is right. The method only changes which costs are expensed first; the tax consequence is the real economic difference.

Follow-ups. Which would you choose as a CFO? What happens when prices fall?

Common mistake: assuming the method with higher profit is better. The cash answer is the one that matters.

48 What is the LIFO reserve, and which framework prohibits LIFO?

Advanced · IB, PM · Guide 01 §4.1

Answer

The LIFO reserve is the difference between inventory under FIFO and under LIFO, disclosed so analysts can restate a LIFO company to FIFO for comparison. IFRS prohibits LIFO. U.S. GAAP permits it, and a U.S. company that uses LIFO for tax must also use it in its financial statements.

Why it is right. The reserve is the adjustment needed to make LIFO and FIFO companies comparable.

Follow-ups. What is a LIFO liquidation? Why does the conformity rule exist?

Common mistake: confusing the reserve with a cash account.

49 How are leases accounted for, and how does that affect EBITDA comparisons?

Advanced · PE, Credit · Guide 01 §4.6

Answer

Most leases now go on the balance sheet as a right-of-use asset and a lease liability. Under IFRS 16, lessees treat almost all leases like financed purchases, with depreciation and interest on the income statement. Under U.S. GAAP, operating leases stay on the balance sheet but show a single straight-line lease cost in opex. So an IFRS company reports higher EBITDA than an identical GAAP company, and comparisons need adjusting.

Why it is right. Under IFRS 16 the lease cost sits below EBITDA; under GAAP operating lease cost sits above it.

Follow-ups. How do lenders treat lease liabilities in leverage? What did the old rules look like?

Common mistake: still describing capital and operating leases under the pre-2019 tests.

50 Is goodwill amortised? Under which frameworks and for whom?

Intermediate · IB, PE · Guide 01 §4.8

Answer

Not under IFRS, and not for U.S. public companies: it is tested for impairment at least annually and written down if the acquired business is worth less than its carrying value. U.S. private companies may elect to amortise it, generally over ten years or less. Separately, for U.S. tax purposes goodwill from an asset purchase is amortised over fifteen years.

Why it is right. The book treatment and the tax treatment differ, and interviewers test whether you keep them apart.

Follow-ups. Why would goodwill be impaired? What does a large impairment tell you?

Common mistake: saying goodwill is amortised over forty years, which was the rule two decades ago.

51 What are deferred tax assets and liabilities, and what creates each?

Intermediate · IB, PE · Guide 01 §4.10

Answer

They arise because book accounting and tax rules differ. A deferred tax liability means the company has paid less cash tax so far than its book expense implies, typically because tax depreciation is faster, and will pay more later. A deferred tax asset means it will pay less later, for example because of losses carried forward or provisions that are deductible only when settled.

Why it is right. Deferred tax is the balance sheet reconciliation between two sets of rules.

Follow-ups. Is a DTL debt? What is a valuation allowance? Why does an acquisition create DTLs?

Common mistake: getting the direction backwards. A liability means tax deferred, not tax prepaid.

52 What is a net operating loss, and can an acquirer use the target's?

Advanced · PE, IB · Guide 01 §4.11

Answer

An NOL arises when tax deductions exceed taxable income, and it can be carried forward to reduce future tax. An acquirer can use the target's NOLs, but most countries restrict this after a change of control. In the U.S., Section 382 caps annual use at roughly the target's equity value times a long-term tax-exempt rate published by the IRS, and post-2017 federal NOLs offset only 80% of taxable income in a year.

Why it is right. Without the limit, buying loss-making companies purely for their tax attributes would be a business.

Follow-ups. How do you value an NOL? How do African tax regimes treat carry-forwards?

Common mistake: valuing the full NOL at the tax rate with no limit and no discounting.

53 Is interest always tax deductible?

Advanced · PE, Credit · Guide 01 §4.12

Answer

No. Many countries cap net interest deductions, commonly at 30% of a tax measure of EBITDA, following the OECD approach, with disallowed interest often carried forward. The U.S. rule is 30% of adjusted taxable income; that measure moved to an EBIT basis in 2022, but legislation in 2025 restored the EBITDA-style basis for tax years beginning after 31 December 2024. A highly leveraged company can therefore lose part of its tax shield.

Why it is right. The tax shield is a core LBO assumption, and it is not unlimited.

Follow-ups. What does the cap do to an LBO model? Which countries apply it?

Common mistake: reciting the older EBIT version of the U.S. rule as current.

54 DuPont: net margin 3%, asset turnover 1.3x, assets to equity 5.1x. What is ROE, and what does it tell you?

Advanced · PM, Credit · Guide 01 §7.1 · Numerical

Answer

About 20%: 3% times 1.3 times 5.1. But it tells me the return is manufactured by leverage. A 3% margin with assets at five times equity means a small operating setback wipes out the return, and the same 20% earned by a company with a 10% margin and 2x leverage is a completely different risk.

Why it is right. DuPont separates profitability, efficiency and leverage so you can see which is doing the work.

Follow-ups. Which business models naturally run high turnover and low margin? What happens to ROE if interest rates rise?

Common mistake: stopping at the number. The decomposition is the answer.

55 You have five minutes with a company's annual report and can read three pages. Which three?

Curveball · All roles · Guide 01 §8.1

Answer

The cash flow statement, because it tells me what the business generates and what it does with it. The segment note, because it shows where the profit actually sits and which parts are growing. And the related-party note, because it is short and it is where the surprises live. If I could trade one, I would take the debt note for the maturities and covenants.

Why it is right. The question tests priorities. Any defensible three with reasons passes; the press release and the chairman's letter fail.

Follow-ups. Why not the income statement? What would you read differently for a bank?

Common mistake: picking the income statement and balance sheet by reflex, without a reason.

EV and equity value: the bridge (56–64)

56 What is the difference between enterprise value and equity value?

Core · All roles · Guide 02 §1.1

Answer

Equity value is what the shareholders' stake is worth: share price times diluted shares. Enterprise value is the value of the operating business to all capital providers: equity plus debt, preferred stock and non-controlling interests, less cash and non-operating assets. Enterprise value is the price of the house; equity value is what the owner keeps after the mortgage.

Why it is right. The two answer different questions: what the business is worth, and what the shareholders own.

Follow-ups. Walk me from one to the other. Which do you use for multiples?

Common mistake: defining EV as "market cap plus debt" and stopping. The other items are where the follow-ups go.

57 50m shares at \$20, debt \$300m, cash \$100m, preferred \$50m, non-controlling interests \$50m. What is enterprise value?

Core · All roles · Guide 02 §1.2 · Numerical

Answer

\$1.3bn. Equity value is \$1,000m. Add \$300m of debt, \$50m of preferred and \$50m of non-controlling interests, subtract \$100m of cash: \$1,300m.

Why it is right. Every claim on the business that a buyer would have to satisfy is added; cash the buyer would receive is subtracted.

Follow-ups. What if the company also had \$80m of equity-method investments? Lease liabilities?

Common mistake: subtracting non-controlling interests or forgetting preferred.

58 Why do you subtract cash, and when is that wrong?

Intermediate · All roles · Guide 02 §1.3

Answer

Cash is not part of the operating business, and a buyer effectively gets it back: it can repay debt or pay itself a dividend with it. Strictly you should subtract only excess cash, not the minimum the business needs to operate, and for a company with cash trapped in subsidiaries or overseas, part of it may not be accessible. In practice most analysts subtract all of it and note the exceptions.

Why it is right. Consistency: EV should reflect the operations, and cash is not an operating asset.

Follow-ups. How much cash does a business need? What is trapped cash?

Common mistake: no answer to "when is it wrong." The nuance is the question.

59 Why do you add non-controlling interests?

Advanced · IB, PM · Guide 02 §1.4

Answer

Because when a company owns more than 50% of a subsidiary it consolidates 100% of that subsidiary's revenue and EBITDA. To keep the multiple consistent, enterprise value must also include 100% of the subsidiary, so we add the value of the stake the parent does not own. Otherwise the numerator covers 70% of a business while the denominator covers all of it.

Why it is right. Numerator and denominator must describe the same set of assets.

Follow-ups. Book value or market value of the minority? Why subtract equity-method investments?

Common mistake: saying "because it is like debt." It is added for consistency, not because it is a claim like a loan.

60 Why subtract equity-method investments?

Advanced · IB, PM · Guide 02 §1.4

Answer

The mirror of non-controlling interests. A stake of 20% to 50% is not consolidated, so its revenue and EBITDA are not in the company's operating metrics, but its value is in the equity value. To make EV consistent with EBITDA, the investment is subtracted as a non-operating asset, and it can be valued separately.

Why it is right. The same consistency principle in reverse.

Follow-ups. Where does the investment's income appear? How would you value it?

Common mistake: adding it, by analogy with minorities.

61 Why add preferred stock?

Intermediate · All roles · Guide 02 §1.5

Answer

Preferred shareholders have a claim on the company ahead of common shareholders and receive a fixed dividend, so they are a provider of capital that a buyer has to pay off, much like debt. It is not part of the common equity value, so it is added to reach enterprise value.

Why it is right. EV includes all capital providers; preferred is one.

Follow-ups. What about convertible preferred? At book value or liquidation value?

Common mistake: treating preferred as part of equity value because it has "stock" in the name.

62 Which other items would you treat as debt-like?

Advanced · PE, Credit · Guide 02 §1.2

Answer

Lease liabilities, unfunded pension obligations, deferred consideration and earn-outs from past acquisitions, accrued but unpaid restructuring costs, dividends declared, certain provisions and environmental liabilities, and sometimes deferred revenue if delivering it will cost cash. In a private deal these are negotiated line by line in the net debt definition, because every dollar of debt-like items reduces the equity price.

Why it is right. Anything that will consume cash that a buyer would otherwise receive is economically debt.

Follow-ups. Would you treat deferred tax as debt? Why do sellers fight the net debt definition?

Common mistake: a list with no principle. The principle is future cash a buyer has to pay.

63 Enterprise value is \$100 and equity value is \$150. What is net debt?

Core · All roles · Guide 02 §1.7 · Numerical

Answer

Minus \$50. The company holds \$50 more cash than debt, ignoring other bridge items.

Why it is right. EV equals equity plus net debt, so net debt equals EV less equity.

Follow-ups. What kind of company has net cash of a third of its equity value? What does that do to EV multiples?

Common mistake: answering \$50 without the sign.

64 Can equity value be negative? Can enterprise value?

Intermediate · All roles · Guide 02 §1.6

Answer

Market equity value cannot be negative, because neither share price nor share count can be. Book equity can be, after losses or debt-funded buybacks. Enterprise value can be negative when a company holds more cash than its market value plus debt, which happens to distressed or deeply unloved companies, and means the market values the operating business at less than nothing.

Why it is right. Equity is a limited-liability claim with a floor of zero; EV is a derived figure with no floor.

Follow-ups. Why would the market do that? Would you buy a negative EV company?

Common mistake: confusing book equity with market equity.

EV and equity value: dilution and multiples (65–85)

65 100 shares at \$10, 10 options at a \$5 strike. Diluted shares and diluted equity value?

Core · IB, PM · Guide 02 §1.8 · Numerical

Answer

All options are in the money. Exercise creates 10 shares and \$50 of proceeds, which buys back 5 shares at \$10. Diluted shares are 105, and diluted equity value is \$1,050.

Why it is right. The treasury stock method assumes proceeds are used to repurchase shares, so the net dilution is only the value the company does not receive.

Follow-ups. What if the strike were \$12? What if you were valuing an acquisition rather than the trading price?

Common mistake: adding all 10 options without the buyback.

66 100 shares at \$20 and 20 options at \$10. How many diluted shares?

Intermediate · IB, PM · Guide 02 test · Numerical

Answer

110. Twenty options create 20 shares and \$200 of proceeds, which buys back 10 shares at \$20, so net dilution is 10.

Why it is right. Net new shares equal options times one minus strike over price: $20 \times (1 - 10/20) = 10$.

Follow-ups. What happens to dilution as the share price rises? Why are out-of-the-money options ignored?

Common mistake: answering 120.

67 Explain the treasury stock method in one sentence, and the logic behind it.

Intermediate · IB, PM · Guide 03 §7

Answer

Assume all in-the-money options are exercised and the cash received is used to buy back shares at the current price, so the dilution counted is only the shares the company could not afford to repurchase. The logic is that exercise is not free to the employee: the company receives the strike price, and that cash offsets part of the dilution.

Why it is right. It measures the economic transfer to option holders, not the gross number of shares.

Follow-ups. Does the market actually buy back shares? Why use the offer price in an M&A context?

Common mistake: describing the mechanics without the reason.

68 Options outstanding or options exercisable: which, and when?

Advanced · IB, PE · Guide 03 §2.8

Answer

For a trading valuation, some analysts use only exercisable, vested, options, since unvested ones cannot dilute today. For an acquisition, use all outstanding options expected to vest, because change-of-control provisions usually accelerate vesting and the buyer has to cash out every holder. Check the plan documents; the answer depends on their terms.

Why it is right. The purpose of the count decides which options are real claims in that scenario.

Follow-ups. What about restricted stock units? Performance shares?

Common mistake: a fixed rule with no reference to acceleration.

69 How do you treat convertible debt in the share count?

Advanced · IB, PM · Guide 02 §1.8

Answer

If the conversion price is below the current share price, the convertible is in the money: treat it as converted, add the new shares to the diluted count and remove the debt from the bridge. If it is out of the money, treat it as debt and do not add shares. Never do both.

Why it is right. A convertible is either equity or debt at any given price; counting it as both overstates enterprise value.

Follow-ups. What is the conversion price? How does a rising share price change the answer?

Common mistake: adding the shares and keeping the debt.

70 Why can't you use EV/Earnings or Price/EBITDA?

Core · All roles · Guide 02 §1.9

Answer

Because the numerator and denominator must refer to the same capital providers. Enterprise value belongs to debt and equity, so it pairs with metrics before interest: revenue, EBITDA, EBIT. Equity value belongs to shareholders only, so it pairs with metrics after interest: net income, levered free cash flow. Mixing them compares a whole-company value with a shareholder-only measure.

Why it is right. Consistency of claimants is the rule behind every multiple.

Follow-ups. Is EV/Revenue consistent? Where does EV/FCF fit?

Common mistake: saying "convention" rather than giving the reason.

71 Which multiples pair with enterprise value, and which with equity value?

Core · All roles · Guide 02 §2.5

Answer

Enterprise value: revenue, gross profit, EBITDA, EBIT, EBITDA less capex, unlevered free cash flow. Equity value: net income or P/E, levered free cash flow, book value, funds from operations for a REIT, dividends.

Why it is right. Pre-interest metrics with EV; post-interest metrics with equity.

Follow-ups. Which would you use for a bank? For a mining company?

Common mistake: putting book value with EV.

72 Market cap \$2bn, net debt \$500m, EBITDA \$300m. What is EV/EBITDA?

Core · All roles · Guide 10 test · Numerical

Answer

About 8.3x. Enterprise value is \$2.5bn, divided by \$300m.

Why it is right. Add net debt to market cap, then divide by the pre-interest metric.

Follow-ups. Is that cheap? What would you compare it with?

Common mistake: dividing market cap by EBITDA and getting 6.7x.

73 Free cash flow \$150m, market cap \$2bn. What is the FCF yield, and what does it imply?

Intermediate · PM · Guide 10 test · Numerical

Answer

7.5%. The company generates cash equal to 7.5% of its equity value each year, which is the return a shareholder would earn if all of it were paid out and nothing grew. Compare it with the cost of equity and with bond yields: a 7.5% yield with growth is attractive; a 7.5% yield from a shrinking business is not.

Why it is right. FCF yield is the inverse of a price-to-cash-flow multiple and is the cleanest measure of what an owner actually receives.

Follow-ups. Levered or unlevered FCF here? What is the equivalent for enterprise value?

Common mistake: using unlevered FCF with market cap.

74 A company issues \$200m of debt and buys back \$200m of stock. What happens to enterprise value?

Advanced · IB, PM · Guide 02 §9 quick-fire · Numerical

Answer

In theory, nothing. Debt rises \$200m and equity value falls \$200m, so EV is unchanged, because the operating business is the same. In practice the tax shield on the new debt adds a little value and the higher leverage adds risk, so the market's reaction depends on which it weighs more.

Why it is right. EV reflects the operations, not how they are financed. The recap only changes the mix of claims.

Follow-ups. What happens to EPS? To the cost of equity? To the P/E?

Common mistake: saying EV rises by \$200m because debt rose.

75 A company raises \$100m of equity and holds it in cash. What happens to EV and to equity value?

Advanced · IB, PM · Guide 02 §1.3 · Numerical

Answer

Equity value rises by \$100m, since new shares were issued for cash. Enterprise value is unchanged: the extra \$100m of equity is offset by \$100m more cash to subtract. The operating business is worth exactly what it was.

Why it is right. Cash raised and held is non-operating, so it passes through the bridge without touching EV.

Follow-ups. What if the cash is then spent on an acquisition? What does the issuance do to EPS?

Common mistake: raising EV by \$100m.

76 Two identical companies, one leveraged. Which has the higher EV? The higher P/E?

Advanced · IB, PM · Guide 02 §9 quick-fire

Answer

The same enterprise value, since the business is the same, with a small edge to the leveraged one for its tax shield. The leveraged company has lower equity value and a higher cost of equity, so its P/E is usually lower: its EPS is higher if the business earns more than its after-tax cost of debt, but the market applies a lower multiple to riskier earnings.

Why it is right. Leverage changes the split of value and the risk of the equity slice, not the value of the operations.

Follow-ups. Which has the higher EV/EBITDA? Under what conditions would the leveraged company's EPS be lower?

Common mistake: saying the leveraged company has the higher P/E because its EPS is higher.

77 EV/EBITDA is 8x and the EBITDA margin is 20%. What is EV/Revenue?

Intermediate · All roles · Numerical

Answer

1.6x: EV over revenue equals EV over EBITDA times EBITDA over revenue, so 8 times 0.2.

Why it is right. Multiples chain through the ratios that connect their denominators.

Follow-ups. Two companies at 1.6x revenue with 20% and 40% margins: which is cheaper on EBITDA?

Common mistake: dividing instead of multiplying.

78 Why does a company with large minority stakes look cheap on EV/EBITDA?

Advanced · PM · Guide 02 §1.4

Answer

Because its consolidated EBITDA includes 100% of subsidiaries it only partly owns, while the market cap reflects only its share. If the analyst forgets to add non-controlling interests to EV, the multiple is understated. Add the minorities at market value where possible, or strip the minority share out of EBITDA, and the apparent cheapness usually disappears.

Why it is right. A mismatched numerator and denominator makes any multiple meaningless.

Follow-ups. Which African conglomerates show this pattern? How do you value the minority at market?

Common mistake: concluding the company is genuinely undervalued.

79 How does the lease accounting framework change EV/EBITDA comparability?

Advanced · PE, Credit · Guide 01 §4.6

Answer

Under IFRS 16 the lease cost is below EBITDA and the lease liability is on the balance sheet, so the company shows higher EBITDA and higher debt. Under U.S. GAAP an operating lease cost sits in opex, so EBITDA is lower and the liability is usually excluded from net debt. To compare, either add lease liabilities to EV for the IFRS company or add lease expense back to EBITDA for the GAAP one. Never mix the two.

Why it is right. The multiple must be consistent in both numerator and denominator.

Follow-ups. Which treatment do lenders use? What is EBITDAR?

Common mistake: comparing an IFRS retailer's EV/EBITDA with a U.S. retailer's without adjustment.

80 Shares 120m, price \$45, options 8m at \$30, a \$200m convertible converting at \$50. Diluted equity value?

Advanced · IB · Numerical

Answer

The options are in the money: $8\text{m} \times (1 - 30/45)$ adds 2.67m net shares. The convertible is out of the money at \$45 against a \$50 conversion price, so it stays as debt and adds no shares. Diluted shares are 122.67m, and diluted equity value is about \$5.52bn.

Why it is right. Each instrument is tested against the current price separately.

Follow-ups. What happens at \$55? What goes into the EV bridge for the convertible?

Common mistake: converting the bond because it is "convertible."

81 What is the difference between basic and fully diluted shares, and which does the market use?

Core · All roles · Guide 02 §1.8

Answer

Basic shares are the shares outstanding today. Fully diluted shares add the net dilution from in-the-money options, warrants and convertibles. Market value of equity is calculated on diluted shares, because the market prices in the claims that will convert.

Why it is right. Value belongs to everyone with a claim on the equity, not only current holders.

Follow-ups. Where do you find basic shares? Why is the cover of the latest filing better than the balance sheet?

Common mistake: using the weighted average share count from the income statement.

82 When would you use EV/EBIT instead of EV/EBITDA?

Intermediate · PM, PE · Guide 02 §2.5

Answer

When comparing companies with different capital intensity, because EBIT charges for the cost of using assets through depreciation. Two businesses with equal EBITDA are not equally valuable if one has to spend twice as much to maintain its assets. EV/EBIT, or EV over EBITDA less capex, captures that; EV/EBITDA hides it.

Why it is right. Depreciation is a real cost in an asset-heavy business, deferred rather than avoided.

Follow-ups. Why did Buffett criticise EBITDA? What if depreciation and capex diverge?

Common mistake: saying EBITDA is always better because it is "closer to cash."

83 A company has \$400m of cash, \$100m of debt and a \$300m market cap. What does that imply?

Advanced · PM · Guide 02 §1.6 · Numerical

Answer

Enterprise value is zero: \$300m plus \$100m minus \$400m. The market is valuing the operating business at nothing. That usually means it is burning cash, the cash is trapped or committed, there are liabilities the bridge does not capture, or the market expects management to destroy the cash. It is worth investigating, but it is rarely the free lunch it looks like.

Why it is right. A zero or negative EV is a statement about expected cash burn or hidden claims, not a pricing error.

Follow-ups. What would you check first? Could an activist unlock it?

Common mistake: declaring it undervalued without asking why.

84 How does a pending acquisition affect the target's and the acquirer's enterprise value?

Advanced · IB · Guide 03 §8.1

Answer

The target's share price moves to just below the offer, so its equity value and EV reflect the deal price discounted for the risk it fails. The acquirer's market cap moves on the market's judgement of the premium and synergies, but its reported EV does not include the target until closing, when the target's EV is added and the financing appears. During that window, the acquirer's multiples are not comparable with peers.

Why it is right. Pending deals put both companies' valuations in transition.

Follow-ups. What is the merger arbitrage spread? How would you adjust the acquirer's comps?

Common mistake: adding the target's EV to the acquirer's at announcement.

85 A company's EV is unchanged but its equity value halved. What happened?

Curveball · All roles

Answer

Something moved value from equity to other claimants without changing the business: a large debt-funded special dividend or buyback, a debt-funded acquisition with the target's EV netting out, a big pension deficit or lease liability being recognised, or a cash outflow for a liability. Alternatively the market re-rated the risk of the equity without re-rating the assets, which is what happens as a highly leveraged company nears its covenants.

Why it is right. EV constant with equity falling means net debt or debt-like claims rose by the same amount.

Follow-ups. Which of those would you worry about as a lender? As a shareholder?

Common mistake: answering "the share price fell" without saying what must have risen.

Valuation: methods (86–99)

86 What are the main valuation methods, and what does each assume?

Core · All roles · Guide 02 §2.1

Answer

Comparable companies: the market prices similar public companies fairly, so their multiples apply. Precedent transactions: what buyers paid for similar businesses, including a control premium, is a guide to what this one would fetch. Discounted cash flow: value is the present value of the cash the business will generate. An LBO analysis is often added: the price a sponsor could pay and still earn its target return.

Why it is right. Each method rests on a different source of truth: market prices, deal prices, or the company's own cash flows.

Follow-ups. Which gives the highest value? Which do you trust for this company?

Common mistake: listing them without the assumption behind each.

87 Which usually gives the highest value, and why?

Core · IB, PE · Guide 02 §2.2

Answer

Precedent transactions usually come out above trading comps, because acquisition prices include a control premium and often synergies. A DCF can land anywhere, since it rests on projections that tend to be optimistic. An LBO usually gives the lowest, because it discounts at a sponsor's required return of 20% or more rather than a cost of capital.

Why it is right. Control is worth paying for, and a higher discount rate means a lower value.

Follow-ups. When would precedents be lower than comps? Why is the LBO called a floor?

Common mistake: stating the ranking as a law. It is a tendency with known exceptions.

88 When would precedents come in below trading comps?

Advanced · IB · Guide 02 §2.2

Answer

When public markets have rallied since the deals were done, so the precedents reflect an older, cheaper environment. When the only relevant deals were small private companies sold at distressed or illiquid prices. Or when a sector's public leaders trade on scarcity value that no acquired company shared.

Why it is right. Precedents are historical and specific; comps are current and market-wide.

Follow-ups. How old is too old for a precedent? How do you adjust for market movement?

Common mistake: assuming a control premium always makes precedents higher.

89 Which method do you trust most, and when?

Intermediate · All roles · Guide 02 §2.3

Answer

It depends on the company. A DCF for a business with predictable cash flows that differs materially from its peers. Trading comps where there are good public peers and a functioning market. Precedents for a control transaction with relevant recent deals. In practice I triangulate all three and explain the weighting rather than picking one.

Why it is right. Each method fails in identifiable conditions; the skill is knowing which one is failing today.

Follow-ups. Which would you weight for a Nigerian consumer company? For a U.S. software company?

Common mistake: "DCF, because it is the most rigorous." It is the most sensitive.

90 How do you select a comparable set?

Core · IB, PM · Guide 02 §6.1

Answer

Similar business model first, then similar economics: growth, margins, capital intensity and end markets. Then similar size and geography. I start from the company's own peer disclosure and competitors named in filings, analyst universes and industry codes, then cut to the five or six that genuinely compare and can explain every exclusion.

Why it is right. A multiple only transfers between companies the market prices for the same reasons.

Follow-ups. What if there are no good peers? How many is enough?

Common mistake: choosing by industry code alone.

91 Walk me through spreading a comp.

Intermediate · IB · Guide 02 §6.2

Answer

Pull the latest diluted share count from the cover of the most recent filing and the price on a set date, and compute equity value with the treasury stock method. Build net debt from the balance sheet, adjusting for debt-like items. Compute last-twelve-month figures from the annual plus the latest stub less the prior stub. Normalise for one-offs, then calculate the multiples and present median, mean and range.

Why it is right. Every step exists to make the numerator and denominator refer to the same date and the same business.

Follow-ups. Why the cover of the filing? What is the most common error?

Common mistake: a current price with a stale share count.

92 A company has a June year end and reported H1 revenue of \$300m to December. How do you build LTM to December?

Advanced · IB · Guide 02 §6.2 · Numerical

Answer

Take the full fiscal year to June, add the six months from July to December just reported, and subtract the same six months from the prior year. If the fiscal year was \$560m and the prior July-to-December half was \$270m, LTM revenue is \$560m plus \$300m less \$270m, so \$590m.

Why it is right. LTM must cover exactly twelve months ending on the comparison date.

Follow-ups. What is calendarisation of forward estimates? Why does it matter for a seasonal business?

Common mistake: adding the half-year without subtracting the prior one.

93 LTM or forward multiples, and why?

Intermediate · All roles · Guide 02 §6.3

Answer

Forward, where reliable estimates exist, because value depends on future cash flow and the market prices the next twelve months. LTM for private companies and precedent transactions, where forward numbers are not available. A company can look expensive on LTM and cheap on forward if earnings are about to inflect, so I state which I am using every time.

Why it is right. The multiple should match the period the market is actually pricing.

Follow-ups. Whose forward estimates? What if consensus is stale?

Common mistake: mixing LTM for the target and forward for the peers.

94 Which adjustments do you make before calculating a multiple?

Intermediate · IB, PM · Guide 02 §6.2

Answer

Strip one-off gains and charges out of the metric. Treat leases consistently across the set. Add back or remove stock compensation consistently. Adjust net debt for debt-like items and for non-operating assets. And check that the metric and the enterprise value both include or both exclude the same subsidiaries.

Why it is right. A multiple is a ratio; anything that distorts one side without the other distorts the answer.

Follow-ups. Would you add back stock compensation? How do you find one-offs?

Common mistake: normalising the target and not the peers.

95 Mean or median across a comp set?

Core · IB · Guide 02 §6.2

Answer

Median, as the primary figure, because a comp set of six is easily distorted by one outlier. I show the mean and the range alongside it, and if the mean and median diverge a lot I look at which company is causing it and whether it belongs in the set.

Why it is right. Small samples and outliers make the mean unreliable.

Follow-ups. When would you exclude an outlier? When would you keep it?

Common mistake: reporting the mean alone.

96 Where do you find precedent transaction data, and what do you check?

Intermediate · IB · Guide 02 §6.4

Answer

Press releases and merger documents for public targets, the acquirer's filings, and deal databases for private ones. For each, I check the announcement date, whether the multiple was LTM or forward, whether it included synergies or debt assumed, whether it was a control transaction, and how the market has moved since.

Why it is right. A precedent multiple without its context is a number, not a benchmark.

Follow-ups. How do you treat a deal with an earn-out? A deal in a different currency?

Common mistake: taking database multiples at face value.

97 What is a control premium, and what is a minority discount?

Intermediate · IB, PE · Guide 02 §6.6

Answer

A control premium is the amount above the market price a buyer pays to acquire control, because control brings the ability to direct cash flows, change management and capture synergies. A minority discount is its mirror: a stake without control is worth less per share. Precedent transactions include the premium; trading comps do not.

Why it is right. The right to decide is worth something separate from the right to a share of profits.

Follow-ups. How big are premiums typically? Why do minority growth investors demand protective provisions?

Common mistake: adding a control premium to a DCF, which already assumes control of the cash flows.

98 How do you present a valuation conclusion?

Core · IB · Guide 02 §6.5

Answer

A football field: a horizontal bar for each method showing the range it implies, with the DCF range, trading comps, precedents, an LBO floor and the 52-week trading range. Then a concluded range that overlaps most of the methods, with one sentence on which method I weighted and why.

Why it is right. Valuation is a range with a rationale, not a point.

Follow-ups. What if the methods do not overlap? How wide should the concluded range be?

Common mistake: a single number with no range.

99 Why might two similar companies trade at different multiples?

Core · All roles · Guide 02 §2.6

Answer

Differences in growth, margins, capital intensity, risk and quality of earnings. The one with faster growth, more recurring revenue, lower capex or a stronger market position deserves the higher multiple. Leverage affects P/E, accounting differences such as lease treatment affect EV/EBITDA, and sometimes the gap is just investor attention, which is the opportunity.

Why it is right. A multiple is compressed information about growth and risk; different inputs give different outputs.

Follow-ups. Which of those can you quantify? Which one would you bet on closing?

Common mistake: "one is overvalued." Start by assuming the market has a reason.

Valuation: applied (100–120)

100 Company A trades at 12x EBITDA with 8% growth; Company B at 16x with 15% growth. Which is cheaper?

Intermediate · PM, PE · Guide 02 §2.6 · Numerical

Answer

On a growth-adjusted basis, B. A's multiple is 1.5 turns per point of growth; B's is about 1.07. B looks more expensive but you are paying less for each unit of growth. That only holds if B's growth is as durable and as capital-efficient as A's, which is the diligence question.

Why it is right. Multiples should be compared against what drives them.

Follow-ups. What else could justify A's higher price per unit of growth? What does the PEG ratio miss?

Common mistake: answering A because 12 is less than 16.

101 Why would a public company be worth more than an identical private one?

Intermediate · All roles · Guide 02 §2.7

Answer

Liquidity and transparency. Public shares can be sold quickly and the company must publish audited information, so investors accept a lower return. Private valuations often carry a discount for lack of marketability, which is one reason sponsors can buy private companies at lower multiples than public peers.

Why it is right. Investors pay for the option to exit.

Follow-ups. How large is the discount? Why do some private companies trade above public peers?

Common mistake: saying the public company is worth more "because it is bigger."

102 Which multiples suit banks, REITs, miners and early-stage software?

Intermediate · PM · Guide 02 §2.5

Answer

Banks: price to book or tangible book, and P/E, because debt is an operating input and EV is meaningless. REITs: price to funds from operations and net asset value, because depreciation distorts property earnings. Miners: EV/EBITDA at a price deck and net present value per share. Early-stage software: EV/revenue or EV/gross profit adjusted for growth, because there are no earnings.

Why it is right. Each multiple pairs the value with the metric that actually drives it in that sector.

Follow-ups. Why tangible book for banks? What is FFO?

Common mistake: EV/EBITDA for a bank.

103 P/E is 12x. What is the earnings yield, and what does it tell an acquirer?

Core · All roles · Guide 03 §4 · Numerical

Answer

About 8.3%: one divided by twelve. For an acquirer, that is the after-tax return on each dollar of purchase price if earnings stay flat. Compare it with the after-tax cost of funding the deal: if the funding costs less than 8.3%, the deal is accretive.

Why it is right. The earnings yield is the inverse of the multiple and the basis of the accretion shortcut.

Follow-ups. What is the earnings yield of a 25x stock? What does it tell a public investor?

Common mistake: not knowing the inverse instantly. 8x is 12.5%, 10x is 10%, 20x is 5%.

104 EPS is \$4, the stock is \$48 and growth is 16%. What is the PEG, and what does it miss?

Intermediate · PM · Guide 10 test · Numerical

Answer

P/E is 12x, so the PEG is 12 divided by 16, or 0.75. It misses the quality and durability of the growth, the capital required to produce it, the balance sheet, and the difference between a company growing 16% for two years and one growing 16% for ten.

Why it is right. PEG is a quick screen for growth-adjusted value, not a valuation.

Follow-ups. What PEG is "cheap"? Why does PEG break for low-growth companies?

Common mistake: treating a PEG below one as a buy signal.

105 How would you value a company with no revenue?

Advanced · GE · Guide 02 §2.8

Answer

Build a longer projection of when revenue and cash flow arrive, discount at a high rate that reflects the risk of never getting there, and cross-check against recent funding rounds and acquisitions of similar companies. Where there is a reliable relationship, use operating metrics such as users or pipeline. Then be honest that the answer is a range driven mostly by the probability of success.

Why it is right. Value still equals future cash flow; the uncertainty sits in the timing and probability.

Follow-ups. What discount rate? How do venture investors actually price it?

Common mistake: "you can't." You can; it is just uncertain.

106 How would you value a company with volatile commodity-linked earnings?

Advanced · PM · Guide 02 §9 quick-fire

Answer

Normalise earnings to a mid-cycle commodity price rather than using the current one, apply a multiple to that, and show the valuation across a range of prices. Net present value at a price deck is the standard for miners. And I would look at where the company sits on the cost curve, because low-cost producers survive the trough and high-cost ones do not.

Why it is right. A single-point valuation on peak or trough earnings is wrong by construction.

Follow-ups. What is a price deck? Why is cost curve position the key variable?

Common mistake: capitalising current earnings at a normal multiple.

107 When would you use sum-of-the-parts?

Intermediate · IB, PM · Guide 02 §7.10

Answer

When divisions have genuinely different economics and comparable sets: a conglomerate, a telecom with a mobile money arm, a bank with an insurance business. Value each with its own method and peers, add them, then subtract net debt and an allowance for head office costs and any holding company discount.

Why it is right. One blended multiple misprices a company whose parts the market would value very differently.

Follow-ups. Why do conglomerates trade at a discount to the sum? How would an activist use this?

Common mistake: forgetting central costs and taxes on separation.

108 When is liquidation value the right measure?

Intermediate · Credit · Guide 02 §2.4

Answer

When the business may not continue: in distress, to see what creditors and shareholders would recover if the assets were sold and liabilities paid, and when deciding whether a struggling company is worth more broken up than kept whole. It is also a useful floor in asset-heavy industries.

Why it is right. Going-concern value assumes the business survives; liquidation value assumes it does not.

Follow-ups. Orderly or forced liquidation? Why is liquidation value usually below going-concern value?

Common mistake: using book values as liquidation values.

109 What is replacement cost valuation, and where is it used?

Advanced · PE · Guide 02 §2.4

Answer

Valuing a business at what it would cost to rebuild its assets today. It is used in asset-heavy sectors such as infrastructure, shipping and real estate as a sanity check: if a company trades far below replacement cost, either the assets are earning poor returns or the market is pessimistic; if far above, competitors have an incentive to build.

Why it is right. Replacement cost anchors value to the economics of new supply.

Follow-ups. Why might a company be worth less than its assets? What does it miss for a brand or software business?

Common mistake: treating it as intrinsic value rather than a cross-check.

110 A business has \$30m of EBITDA. Comps imply 7x to 9x and precedents 9x to 11x. What range do you conclude?

Intermediate · IB · Guide 02 §6.5 · Numerical

Answer

Comps give \$210m to \$270m and precedents \$270m to \$330m. For a control sale I would conclude roughly \$250m to \$300m, leaning towards the overlap and the precedents because control is being sold, and say that the low end reflects the current public market and the high end what a strategic buyer with synergies has paid.

Why it is right. The conclusion should sit where the methods agree and be explained where they do not.

Follow-ups. What would push you to the top of the range? Where does an LBO floor fall?

Common mistake: averaging the four numbers.

111 How does a country risk premium change an emerging market valuation?

Advanced · All roles · Guide 02 §7.7

Answer

It raises the cost of equity, and so the discount rate, for the extra risk of operating in that country: political, legal, currency and convertibility. It is usually estimated from the sovereign's hard-currency bond spread, sometimes scaled for equity volatility, or from published estimates, and applied based on where the company earns its cash flows. A 3 to 5 point premium can cut a DCF value by a third or more.

Why it is right. Cash flows that could be impaired by events outside the company's control deserve a higher required return.

Follow-ups. Should it apply to a Nigerian exporter earning dollars? Alternative to adjusting the discount rate?

Common mistake: adding a country premium and also haircutting the cash flows for the same risk.

112 What should you consider when valuing a company in another currency?

Advanced · All roles · Guide 02 §2.9, §7.6

Answer

Keep cash flows and discount rate in the same currency and the same inflation basis. Model in local currency with a local nominal discount rate, or convert to dollars at forward rates that reflect the inflation differential and use a dollar rate with a country premium. Use local peers where possible and adjust for accounting differences. Never mix a dollar discount rate with nominal local cash flows.

Why it is right. Inflation is in the cash flows and in the rate; they must match or the value is fiction.

Follow-ups. Which currency should a Kenyan pension fund model in? Why is the mismatch so common?

Common mistake: exactly that mismatch, which overstates value dramatically in high-inflation markets.

113 A Nigerian company earns 16% nominal with 12% inflation. What is the real return, and why does it matter?

Advanced · All roles · Guide 12 §3.5 · Numerical

Answer

About 3.6%: 1.16 divided by 1.12, less one. The quick approximation of 4% is fine in conversation. It matters because a 16% return that looks spectacular in naira is barely holding real value, and a dollar investor faces the currency depreciation that the inflation differential implies on top of that.

Why it is right. Real return is what an investor can actually consume; nominal return in a high-inflation currency is mostly inflation.

Follow-ups. What dollar return does that imply if the currency depreciates with the inflation gap? Why do local pension funds still hold these assets?

Common mistake: subtracting to get 4% and stopping without the point about currency.

114 How do you value a minority stake with no control and no liquidity?

Advanced · GE, PE · Guide 07 §4, Guide 02 §6.6

Answer

Start with the value of the whole company, take the stake's pro rata share, then apply discounts for lack of control and lack of marketability, which together can be 20% to 40%. Then adjust for the specific rights attached: a liquidation preference, tag-along rights, redemption rights or board control reduce the discount because they protect the holder.

Why it is right. The stake's value depends on what the holder can actually do and when it can exit.

Follow-ups. Why do growth investors take preferred rather than common? How does a put option to the founder change the value?

Common mistake: pro rata share with no discount.

115 What is a football field, and what belongs on it?

Core · IB · Guide 02 §6.5

Answer

A chart with a horizontal bar per valuation method showing the range each implies: trading comps, precedents, DCF under a couple of scenarios, an LBO analysis as a floor, and the 52-week trading range and analyst targets for a public company. The concluded range is drawn across it.

Why it is right. It shows where methods agree and how much of the value is judgement.

Follow-ups. What does it mean if the LBO floor is above the trading range? Which bar do you widen?

Common mistake: making every bar the same width, which hides which methods are reliable.

116 Your DCF says \$50, comps say \$35, precedents say \$60. What do you tell the client?

Advanced · IB · Guide 02 §2.3

Answer

That the market values businesses like this at around \$35 today, that acquirers have paid up to \$60 for control with synergies, and that our own view of the cash flows sits at \$50. For a sale, the achievable price probably lies between \$45 and \$60 depending on how many strategic buyers we can attract; for a stock decision, \$35 is what the market will pay tomorrow and the gap to \$50 is the thesis.

Why it is right. Each number answers a different question; the job is to say which question the client is asking.

Follow-ups. Which assumptions drive the DCF above the comps? What would make a buyer pay \$60?

Common mistake: averaging to \$48 and presenting it as the answer.

117 How would you value a business whose only asset is a 20-year government contract?

Advanced · PE · Guide 11 §9.1

Answer

As a stream of contracted cash flows: a DCF over the twenty years with little or no terminal value, discounted at a rate that reflects the counterparty's credit and the currency, not a corporate cost of capital. The two things that matter are the government's ability to pay and the termination provisions. Cross-check against transaction multiples for similar concessions.

Why it is right. The asset is a receivable from a government with a known end date, so it is priced like one.

Follow-ups. What discount rate for a Ghanaian ministry? What if the contract is in local currency?

Common mistake: applying a perpetuity terminal value to an asset that expires.

118 What is the "greater fool" risk in relying on precedent transactions?

Curveball · PE, IB

Answer

That past buyers overpaid, and by using their prices as a benchmark you overpay too, with the justification that someone else did first. A precedent tells you what a buyer was willing to pay, not what the business was worth. If the acquirer later wrote down the goodwill, the precedent is evidence of a mistake, not a market price.

Why it is right. Deal prices include control premiums, synergies and error; only the first two are transferable.

Follow-ups. How would you check whether a precedent worked out? What replaces precedents if you distrust them?

Common mistake: treating every closed deal as validation of its price.

119 If markets are efficient, why does anyone build a DCF?

Curveball · PM

Answer

Because efficiency is a tendency, not a guarantee, and because a DCF is how you find out what the market is assuming. Reverse-engineering the price into implied growth and margins tells you what you have to believe to own the stock. Markets are most efficient for large, well-covered companies and least for small, complex or emerging-market ones, which is where the work pays.

Why it is right. The DCF is a tool for testing consensus, not only for producing a target price.

Follow-ups. Where is your edge? What does the current price of a stock you follow imply?

Common mistake: defending DCFs as producing "true value."

120 A company is cheap on every multiple. Give me three reasons not to buy it.

Curveball · PM, PE · Guide 10 test

Answer

Earnings are about to fall, so the multiple is measured on a number that will not exist next year. The balance sheet is stretched, so the equity is a thin slice of a leveraged whole. And there is no catalyst, so it can stay cheap indefinitely while the business slowly deteriorates. A fourth is governance: cheap because the controlling shareholder cannot be trusted with the cash.

Why it is right. A low multiple is a market opinion about the future; the question is whether the market is wrong.

Follow-ups. Which of those is most common in African markets? How would you test the first one?

Common mistake: "it might be a value trap" with no mechanism.

DCF: cash flow and discount rate (121–130)

121 Walk me through a DCF.

Core · All roles · Guide 02 §3.1

Answer

Project unlevered free cash flow for five to ten years. Calculate a terminal value for the years beyond, by exit multiple or perpetuity growth. Discount the cash flows and the terminal value at the weighted average cost of capital; the sum is enterprise value.

Subtract net debt and other claims for equity value, and divide by diluted shares for a per-share value.

Why it is right. Unlevered cash flow with WACC gives a value for all capital providers, which is why the result is enterprise value.

Follow-ups. Why unlevered? How long a projection? Which terminal value method?

Common mistake: forgetting the bridge from enterprise to equity value at the end.

122 Calculate unlevered free cash flow: EBIT \$200m, tax 25%, D&A \$40m, capex \$50m, working capital increase \$15m.

Core · All roles · Guide 02 §3.2 · Numerical

Answer

\$125m. EBIT after tax is \$150m. Add back \$40m of D&A, subtract \$50m of capex and subtract the \$15m increase in working capital.

Why it is right. Tax is applied to EBIT as if there were no debt, then the non-cash charge is added back and the real investments are deducted.

Follow-ups. Why tax EBIT rather than actual taxes paid? What if working capital had decreased?

Common mistake: adding the working capital increase. Some prep materials print the formula with the wrong sign.

123 Why is it unlevered, and what would change if you used levered cash flow?

Intermediate · All roles · Guide 02 §3.2

Answer

Unlevered cash flow is before interest and debt repayment, so it belongs to all capital providers and is independent of how the company is financed. Discounted at WACC it gives enterprise value. Levered cash flow subtracts after-tax interest and net debt repayment, so it belongs to equity only; discounted at the cost of equity it gives equity value directly. Mixing them is the classic error.

Why it is right. The cash flow and the discount rate must describe the same claimants.

Follow-ups. When would you use a levered DCF? Which is easier to get wrong?

Common mistake: levered cash flow discounted at WACC.

124 Which discount rate goes with which cash flow?

Core · All roles · Guide 02 §3.2

Answer

Unlevered free cash flow with WACC, giving enterprise value. Levered free cash flow, or dividends, with the cost of equity, giving equity value. Debt cash flows with the cost of debt, giving debt value.

Why it is right. Each rate is the return required by the group of investors receiving that cash flow.

Follow-ups. What happens if you use the cost of equity on unlevered cash flow? Why is that answer too low?

Common mistake: hesitation. This one has to be automatic.

125 Calculate WACC: 60% equity at 10.6%, 40% debt at 6% pre-tax, 25% tax.

Core · All roles · Guide 02 §3.3 · Numerical

Answer

8.2%. Equity contributes 0.6 times 10.6%, which is 6.36%. Debt contributes 0.4 times 6% times 0.75, which is 1.8%. Together 8.16%, so about 8.2%.

Why it is right. Debt is tax-effected because interest is deductible; equity is not.

Follow-ups. Why market weights? What if the company has preferred stock? Why does WACC fall as leverage rises, at first?

Common mistake: forgetting the tax shield on debt.

126 Cost of equity with a 4% risk-free rate, beta 1.2 and a 5.5% equity risk premium.

Core · All roles · Guide 02 §3.4 · Numerical

Answer

10.6%: 4% plus 1.2 times 5.5%. That is the CAPM: the risk-free rate plus the stock's sensitivity to the market times the premium the market pays over the risk-free rate.

Why it is right. Investors are compensated only for systematic risk, measured by beta.

Follow-ups. Which risk-free rate? Where does 5.5% come from? What would you add for a Nigerian company?

Common mistake: multiplying beta by the market return rather than the premium.

127 Unlever a beta of 1.2 at a debt-to-equity of 0.5 and 25% tax, then relever at a debt-to-equity of 1.0.

Advanced · IB, PM · Guide 02 §3.5 · Numerical

Answer

Unlevered beta is 1.2 divided by one plus 0.75 times 0.5, so 1.2 divided by 1.375, about 0.87. Relevered at 1.0: 0.87 times one plus 0.75 times 1.0, so 0.87 times 1.75, about 1.53.

Why it is right. Leverage amplifies equity risk; the formula strips it out and adds it back at the target structure.

Follow-ups. What assumption does that formula make about debt? Why is the relevered beta higher than the original?

Common mistake: relevering the peer's beta without unlevering it first.

128 Why do you unlever and relever beta at all?

Intermediate · IB, PM · Guide 02 §3.5

Answer

Because a peer's observed beta mixes its business risk with its leverage. To use it for another company, strip out the peer's leverage to get the pure business risk, take the median across peers, then add back the leverage of the company you are valuing. Without that step you import the peer's capital structure into your discount rate.

Why it is right. Business risk transfers between similar companies; financial risk does not.

Follow-ups. Why the median rather than the mean? What if the company is private with no peers?

Common mistake: describing the formula rather than the reason.

129 What does beta measure, and what are its limitations?

Intermediate · PM · Guide 02 §3.5

Answer

How much a stock moves with the market; the market's beta is one. It is estimated by regressing the stock's returns on the market's, so it is backward-looking, depends on the period and frequency chosen, is noisy for thinly traded stocks, and captures only systematic risk. For a company that has changed its business or its leverage, the historical beta describes a different company.

Why it is right. Beta is an estimate of a relationship, not a property of the company.

Follow-ups. What beta would you expect for a utility? For a gold miner? What is a negative beta?

Common mistake: quoting a beta to two decimal places as if it were precise.

130 Why use market values rather than book values in WACC?

Intermediate · All roles · Guide 02 §9 quick-fire

Answer

Because investors' required returns relate to what their claims are worth today, not to historical cost. Book equity can be tiny or negative after buybacks while the company is worth billions; weighting by book would give debt an absurd share of the structure. Use market values, or a target capital structure the company is expected to maintain.

Why it is right. WACC is a forward-looking opportunity cost; book values are history.

Follow-ups. What if the company is private? Why a target structure rather than today's?

Common mistake: using book debt to equity from the balance sheet.

DCF: terminal value and judgement (131–155)

131 Terminal value by perpetuity growth: final-year free cash flow \$100m, WACC 10%, growth 3%.

Core · All roles · Guide 02 §3.9 · Numerical

Answer

About \$1,471m: \$100m times 1.03, divided by 10% less 3%, which is \$103m over 7%.

Why it is right. The formula values a cash flow growing at g forever, starting one year after the final projected year, which is why the numerator is grown once.

Follow-ups. What exit multiple does that imply? What if growth were 4%?

Common mistake: forgetting to grow the numerator by one year.

132 What exit multiple does that terminal value imply if final-year EBITDA is \$150m?

Advanced · IB, PE · Guide 02 §3.9 · Numerical

Answer

About 9.8x: \$1,471m divided by \$150m. If that is above where the sector trades, the 3% growth assumption is probably too high for this business, and I would pull it down until the implied multiple is credible.

Why it is right. The two methods should imply each other; the cross-check catches unrealistic inputs.

Follow-ups. What growth rate would imply 8x? Why is the implied multiple higher than today's trading multiple usually a warning?

Common mistake: computing one method and never checking it against the other.

133 Terminal value by exit multiple: EBITDA \$150m at 9x, final-year free cash flow \$100m. What growth rate does it imply at a 10% WACC?

Advanced · IB · Guide 02 §3.9 · Numerical

Answer

Terminal value is \$1,350m. Setting \$100m times one plus g, over 10% less g, equal to \$1,350m gives g of about 2.4%. That is a plausible long-run rate, so the 9x multiple is internally consistent.

Why it is right. Rearranging the perpetuity formula turns a multiple into the growth it assumes.

Follow-ups. What if the implied growth came out at 6%? Why do bankers prefer the multiple method?

Common mistake: not being able to solve for g under pressure. Practise the rearrangement.

134 Which terminal value method do you prefer and why?

Intermediate · All roles · Guide 02 §3.9

Answer

I calculate both and check that each implies a sensible version of the other. The exit multiple method ties to market data, which is why bankers default to it. The perpetuity method forces you to state a growth rate explicitly, which is more honest about what you are assuming. Neither is right on its own; the cross-check is the method.

Why it is right. Terminal value is most of a DCF, so it needs two independent estimates.

Follow-ups. Which is more variable? When must you use perpetuity growth?

Common mistake: choosing one and defending it as superior.

135 What is a reasonable long-term growth rate, and what caps it?

Core · All roles · Guide 02 §3.9

Answer

Around expected long-run inflation, or nominal GDP growth for the economy the company operates in, measured in the same currency as the cash flows. A company cannot grow faster than its economy forever, because it would eventually become the economy. For a developed market that is two to three percent; for a high-inflation African market the nominal figure is higher but the real figure is similar.

Why it is right. The perpetuity assumes growth forever; only economy-wide rates are sustainable forever.

Follow-ups. Nominal or real? What if the company is in a declining industry?

Common mistake: using 5% because the company has grown 5% historically.

136 Terminal value is 80% of your enterprise value. Is that a problem?

Advanced · All roles · Guide 02 §7.5 · Numerical

Answer

It is a warning, not a fault. It means four-fifths of the value rests on assumptions beyond the forecast period, so the answer is only as good as the growth rate or exit multiple. It is normal for a fast-growing company with low current cash flow. My response would be to extend the forecast until the business is closer to steady state, and to sensitise the terminal assumptions heavily.

Why it is right. A high terminal share shifts the analysis from forecasting to assuming.

Follow-ups. What share would be typical for a utility? How would you present the sensitivity?

Common mistake: saying it is fine because "it is always high."

137 What is the mid-year convention, and what does it do to the answer?

Advanced · IB · Guide 02 §7.1

Answer

Discounting each year's cash flow as if it arrives mid-year, using periods of 0.5, 1.5, 2.5 and so on, because cash actually arrives throughout the year. It raises the valuation slightly, since cash is discounted by half a period less. The terminal value must be treated consistently: either discounted at the final mid-year point or adjusted explicitly.

Why it is right. Year-end discounting understates value by assuming a full year's delay on every cash flow.

Follow-ups. How much does it change value, roughly? How does it interact with the exit multiple method?

Common mistake: applying mid-year to the cash flows and year-end to the terminal value without saying why.

138 Discount \$100m received in year 3 at 9%, year-end and mid-year.

Intermediate · IB · Numerical

Answer

Year-end: \$100m over 1.09 cubed, about \$77.2m. Mid-year: \$100m over 1.09 to the power 2.5, about \$80.6m. The mid-year figure is higher because the cash is assumed to arrive six months earlier.

Why it is right. Present value falls with time; half a year less time means more value.

Follow-ups. Which is more realistic? What is the percentage difference?

Common mistake: using 3.5 for mid-year.

139 How do you handle a stub period?

Advanced · IB · Guide 02 §7.2

Answer

If the valuation date is part-way through a year, include only the remaining cash flow of that year, pro-rated by months or days, discounted for the fraction of a year, then full years after that. The same logic applies to an LBO closing mid-year: interest, depreciation and covenant tests all use the same fraction.

Why it is right. Value is measured from today, not from the last balance sheet date.

Follow-ups. How does the stub interact with mid-year convention? What about the cash already generated this year?

Common mistake: discounting a full year of cash flow from a date three months before year end.

140 How do you treat NOLs in a DCF?

Advanced · PE, IB · Guide 02 §7.3

Answer

Either model cash tax directly, applying the losses against taxable income year by year subject to any annual limit, so that free cash flow is higher in early years; or value the company at a full tax rate and add the present value of the tax savings as a separate non-operating asset. Never both, and remember a change of control may restrict their use.

Why it is right. NOLs are real cash tax savings with a limited life; they belong in the valuation once.

Follow-ups. Which method is cleaner for a buyer? How do you value them under Section 382?

Common mistake: valuing the full NOL balance at the tax rate without limits or discounting.

141 How do you normalise capex and working capital in the projection?

Advanced · PE · Guide 02 §7.4

Answer

Capex should trend to a steady-state level of roughly depreciation plus what growth requires; if the company has underinvested historically, add catch-up spending. Working capital should be driven by days assumptions consistent with history, not held flat, because a growing business absorbs cash. In the terminal year, both must be consistent with the growth rate assumed.

Why it is right. Growth needs investment; a terminal year that assumes growth without it overstates value.

Follow-ups. What is the relationship between capex and depreciation in steady state? How would you spot underinvestment?

Common mistake: capex equal to depreciation in a terminal year with 3% growth.

142 What happens to value if capex equals depreciation but you assume 3% perpetual growth?

Advanced · PE, PM · Guide 02 §7.4

Answer

Value is overstated, because the model assumes the business grows forever without adding assets. Growth of 3% needs the asset base to grow, so capex should exceed depreciation in the terminal year, and working capital should absorb cash every year. Fixing it lowers terminal free cash flow and therefore value, often materially.

Why it is right. Reinvestment is the price of growth; a model that skips it is buying growth for free.

Follow-ups. How much should capex exceed depreciation for 3% growth? Does the same apply to a software company?

Common mistake: treating this as a rounding issue. It can move value by 10% or more.

143 A 1 percentage point cut in WACC versus a 10% cut in revenue: which moves value more?

Advanced · All roles · Guide 02 §3.12 · Numerical

Answer

Usually the discount rate. With a perpetuity at a 10% WACC and 3% growth, cutting the rate to 9% raises value by about 17%, because one over 6% is a sixth larger than one over 7%. A 10% revenue cut lowers value by roughly 10% if margins hold, and more if operating leverage compresses them. So the answer depends on operating leverage, but the rate usually wins.

Why it is right. Value is convex in the discount rate and roughly linear in revenue.

Follow-ups. What if the business has 80% fixed costs? What does this say about how much to trust a DCF?

Common mistake: answering without a mechanism.

144 Enterprise value from the DCF is \$1.2bn, net debt \$300m, shares 50m. Value per share?

Core · All roles · Guide 02 §3.1 · Numerical

Answer

\$18: \$1.2bn less \$300m is \$900m of equity value, divided by 50m diluted shares.

Why it is right. Unlevered DCF gives enterprise value, so the bridge to equity is required before dividing by shares.

Follow-ups. What else might sit in the bridge? What if the share count includes in-the-money options?

Common mistake: dividing enterprise value by shares.

145 What are the main weaknesses of a DCF?

Core · All roles · Guide 02 §3.10

Answer

It is only as good as its projections, and management projections are optimistic. Terminal value is usually most of the answer. Small changes in WACC or growth move the result a lot. It assumes a constant capital structure. And it is hard to apply to companies with unpredictable cash flows or to banks.

Why it is right. Every input is an estimate and the maths compounds the errors.

Follow-ups. How do you mitigate each? Why use it at all?

Common mistake: listing weaknesses without saying how you manage them.

146 When is a DCF inappropriate?

Intermediate · All roles · Guide 02 §3.10

Answer

For businesses whose cash flows cannot be forecast with any confidence, such as very early-stage companies or highly cyclical ones at an unknown point in the cycle. For banks and insurers, where debt and working capital are the business rather than financing. And for a company about to be restructured, where the capital structure the DCF assumes will not exist.

Why it is right. A DCF needs forecastable cash flows and a stable structure.

Follow-ups. What do you use for a bank? For a start-up?

Common mistake: saying a DCF always works if you try hard enough.

147 Why can't you run a standard DCF on a bank?

Advanced · PM, IB · Guide 02 §3.11

Answer

Because for a bank, debt and deposits are raw materials, not financing, and interest is operating income rather than a financing cost. Unlevered free cash flow and enterprise value lose their meaning. Banks are valued on equity: a dividend discount or residual income model, and multiples such as P/E and price to tangible book, cross-referenced with return on equity.

Why it is right. The separation between operations and financing that a DCF relies on does not exist for a bank.

Follow-ups. What drives a bank's price to book? Why tangible book?

Common mistake: "you can, you just use a different WACC."

148 What is adjusted present value, and when is it better than WACC?

Advanced · PE, IB · Guide 02 §7.9

Answer

Value the business as if all-equity financed, then add the present value of financing effects, mainly the interest tax shield, less expected costs of distress. It is cleaner when leverage changes a lot over time, which is exactly an LBO, because WACC assumes a constant capital structure and an LBO deliberately does not have one.

Why it is right. APV separates the value of the operations from the value of the financing, so changing leverage is handled explicitly.

Follow-ups. What discount rate for the tax shields? Why do practitioners still use WACC?

Common mistake: describing APV as "a DCF with a different rate."

149 What is a size premium, and would you use one?

Advanced · PM, IB · Guide 02 §7.8

Answer

An addition to the cost of equity for small companies, based on evidence that they have historically earned more than beta alone predicts, reflecting liquidity, concentration and fragility. I would use one for a small or private company, state it explicitly as a separate line rather than burying it in beta, and show the valuation with and without it.

Why it is right. CAPM understates required returns for small companies; the premium is a correction with evidence, but also judgement.

Follow-ups. How large? Does the evidence still hold?

Common mistake: hiding a judgement call inside a single blended discount rate.

150 How would you build a discount rate for a Kenyan company with local-currency cash flows?

Advanced · All roles · Guide 02 §7.6 · Guide 12 §3.5

Answer

In shillings. Start from the Kenyan government bond yield as the risk-free rate, which already embeds local inflation and much of the country risk. Add beta times an equity risk premium, and consider whether an additional country premium double-counts what is already in the local yield. Use market or target weights and the local after-tax cost of debt. The result is a nominal shilling rate to apply to nominal shilling cash flows.

Why it is right. The discount rate and the cash flows must share a currency and an inflation basis.

Follow-ups. How would a dollar investor translate the answer? What if the local bond market is illiquid?

Common mistake: a U.S. Treasury rate plus a country premium applied to shilling cash flows.

151 What do you do when you do not believe management's projections?

Intermediate · PE, PM · Guide 02 §3.13

Answer

Build my own case with more conservative assumptions, compare the plan with the company's own history and with peers, break growth into volume, price, mix and acquisitions and test each, and run sensitivity tables on the drivers that matter most. Then present the valuation under management's case and mine, and explain the gap.

Why it is right. The projection is an input you are responsible for, not a given.

Follow-ups. Which assumption is usually most optimistic? How do you present this to management without losing the deal?

Common mistake: haircutting every line by 10% with no reasoning.

152 Which sensitivities do you always run on a DCF?

Intermediate · IB · Guide 02 §7

Answer

Value per share against WACC and terminal growth, and against WACC and exit multiple: the two terminal value methods each need a table. Then the operating drivers: revenue growth against margin. And I would show terminal value as a share of total value so the reader can see how much rests on assumptions.

Why it is right. The sensitivities show which assumptions the answer actually depends on.

Follow-ups. What step size? What if the table shows value doubling across a plausible range?

Common mistake: a single sensitivity table with unrealistic ranges.

153 Your DCF gives a value 40% above the share price. What are three explanations before you call it a buy?

Advanced · PM · Guide 02 §7 · Numerical

Answer

My projections are more optimistic than the market's, which is the most likely. My discount rate is too low, perhaps because I missed a risk the market is pricing. Or the market knows something I do not: a pending event, a governance issue, or an accounting concern. Only once I have tested all three is the gap a thesis rather than an error.

Why it is right. The market's price is a competing estimate by informed people; assume it is right until you can say why it is wrong.

Follow-ups. How would you test the first? What if the gap survives all three?

Common mistake: treating a DCF gap as proof of mispricing.

154 Your terminal growth rate exceeds your WACC. What does the model do, and what does it mean?

Curveball · All roles

Answer

The perpetuity formula divides by WACC minus g , so it produces a negative or infinite value: the maths breaks. It means I have assumed a business that grows faster than the return investors require forever, which is impossible, because it would eventually be worth more than everything. The fix is a lower long-term growth rate, or a longer explicit forecast until growth normalises.

Why it is right. The Gordon growth formula is only valid when g is below the discount rate.

Follow-ups. What about a company genuinely growing 20% for the next decade? How long can super-normal growth last?

Common mistake: not knowing what the formula does at the boundary.

155 A DCF is only as good as its assumptions, so why do it?

Curveball · All roles

Answer

Because it forces every assumption into the open, where it can be argued with. A multiple hides growth, margin and risk in one number; a DCF makes you write each one down. Its real use is often reversed: take the market price, back out what growth and margins it implies, and ask whether you believe them. That is a question you cannot ask with a multiple.

Why it is right. The value of the exercise is the transparency of the inputs, not the precision of the output.

Follow-ups. When did a DCF change your mind about something? What does a stock you follow imply?

Common mistake: defending the DCF's accuracy rather than its usefulness.

M&A: rationale and accretion (156–170)

156 Why do companies make acquisitions?

Core · IB, PE · Guide 03 §1.1

Answer

To buy growth faster or cheaper than building it: new markets, products or customers. To capture synergies, mostly on cost through duplicated functions and purchasing scale. To gain a capability or technology, to remove a competitor, or to secure supply or distribution. Sometimes for financial reasons, such as using excess cash or acquiring a lower-taxed business. Good acquirers can say which of these applies and what it is worth.

Why it is right. Every rationale must ultimately show up as higher cash flow or lower risk for the combined company.

Follow-ups. Which rationale fails most often? Is diversification a good reason?

Common mistake: "synergies" with no distinction between cost and revenue.

157 What are the three types of merger, and the logic of each?

Core · IB · Guide 03 §1.2

Answer

Horizontal: buying a competitor for scale and pricing power, with the biggest cost synergies and the most antitrust attention. Vertical: buying a supplier or customer to secure margin and supply. Conglomerate: buying an unrelated business, usually justified by capital allocation or diversification, which the market tends to discount.

Why it is right. The type tells you where the value is supposed to come from and where the regulator will look.

Follow-ups. Why do conglomerates trade at a discount? Give an example of each in Africa.

Common mistake: naming the types without the logic.

158 Cost or revenue synergies: which do you underwrite, and why?

Core · IB, PE · Guide 03 §1.3

Answer

Cost synergies, because they are within management's control: eliminating duplicate headcount, consolidating facilities and buying at scale. Revenue synergies depend on customers behaving as hoped, which they often do not, and they usually come with dis-synergies as some customers leave. I would include cost synergies with a phasing and one-off costs to achieve them, and treat revenue synergies as upside.

Why it is right. Lenders and boards price what can be controlled.

Follow-ups. What do synergies cost to achieve? How much of announced synergies typically materialise?

Common mistake: counting revenue synergies in the base case.

159 Why do most acquisitions fail to create value for the acquirer?

Intermediate · IB, PE · Guide 03 §1.4

Answer

Because the premium is paid on day one and the synergies arrive later, if at all, so the acquirer has already handed the target's shareholders most of the value. Then integration is harder than planned, key people leave, customers use the disruption to renegotiate, and culture clashes slow everything. The deals that work are usually smaller, in businesses the buyer already understands.

Why it is right. The premium is certain; the synergies are not.

Follow-ups. What share of the synergy value does the seller typically capture? Why do CEOs still do them?

Common mistake: blaming "culture" alone.

160 Walk me through an accretion/dilution analysis.

Core · IB · Guide 03 §4.1

Answer

Set the purchase price and how it is funded across cash, debt and stock. Combine the two companies' net income. Subtract the after-tax cost of new debt and the after-tax interest lost on cash used. Add after-tax synergies and subtract new amortisation from purchase accounting. Divide by the acquirer's shares plus the new shares issued, and compare pro forma EPS with the acquirer's standalone EPS.

Why it is right. Every funding source has a cost, in interest or in shares, and the question is whether the target's earnings cover it.

Follow-ups. What is the shortcut? Why does accretion not equal value creation?

Common mistake: forgetting the lost interest on cash.

161 Give me the earnings-yield shortcut for whether a deal is accretive.

Intermediate · IB, PE · Guide 03 §4.2

Answer

Compare the target's earnings yield at the purchase price, one over the purchase P/E, with the weighted after-tax cost of the funding. Cash costs the after-tax interest forgone, debt costs the after-tax interest rate, and stock costs the acquirer's own earnings yield. If the target yields more than the funding costs, the deal is accretive, before purchase accounting.

Why it is right. Accretion is just whether the earnings bought exceed the earnings given up.

Follow-ups. When does the shortcut mislead? Why is stock the most expensive currency for a low-P/E acquirer?

Common mistake: comparing P/Es only, which works for all-stock deals and nothing else.

162 A 20x P/E acquirer buys a 12x P/E target, all stock, no premium. Accretive or dilutive, and roughly how much?

Core · IB · Guide 03 §4.3 · Numerical

Answer

Accretive: the target yields 8.3% and the acquirer's stock costs 5%. If the two companies had equal net income of \$100m, the acquirer at \$2bn of market cap would issue shares worth \$1.2bn, 60% more shares, for \$100m of extra earnings. Pro forma EPS rises from \$100m per unit of shares to \$200m over 1.6 units, a 25% increase.

Why it is right. In an all-stock deal, a higher-multiple buyer acquiring a lower-multiple target is always accretive.

Follow-ups. Does that make it a good deal? What happens at a 40% premium?

Common mistake: getting the direction right and being unable to size it.

163 A 15x P/E buyer buys a 16x target using cash earning 2%, tax 25%. Accretive?

Intermediate · IB · Guide 03 §4.4 · Numerical

Answer

Yes. The target yields 6.25% after tax at 16x. The cash costs only 1.5% after tax in lost interest. The buyer's own P/E is irrelevant because no shares are issued. It is accretive despite the buyer having the lower multiple, which is why cash deals are almost always accretive in a low-rate environment.

Why it is right. Funding cost, not relative P/E, decides accretion once cash or debt is involved.

Follow-ups. At what interest rate on cash would it become dilutive? Is accretion the right test here?

Common mistake: answering "dilutive because 15 is less than 16."

164 Acquirer net income \$300m, 100m shares, buys a target with \$60m of net income for \$900m of debt at 6%, tax 25%. Pro forma EPS?

Intermediate · IB · Numerical

Answer

Standalone EPS is \$3.00. After-tax interest is \$900m times 6% times 0.75, so \$40.5m. Pro forma net income is \$300m plus \$60m less \$40.5m, so \$319.5m, over an unchanged 100m shares: about \$3.20, roughly 6.5% accretive.

Why it is right. All-debt funding leaves the share count unchanged, so the only cost is after-tax interest.

Follow-ups. What is the purchase P/E and does the shortcut agree? What does this do to the acquirer's leverage?

Common mistake: deducting pre-tax interest.

165 Company A buys B at a 20% premium, half debt at 10% and half stock. A: EPS \$2, 25x P/E, 100 shares. B: \$100 share price, 10x P/E, 20 shares. Tax 40%. Accretion?

Advanced · IB · Guide 03 §4.7 · Numerical

Answer

Purchase price is \$120 times 20 shares, \$2,400m, split \$1,200m debt and \$1,200m stock. After-tax interest is \$1,200m times 10% times 0.6, so \$72m. A's price is \$50, so \$1,200m of stock is 24 new shares. B's net income is \$200m. Pro forma net income is \$200m plus \$200m less \$72m, so \$328m, over 124 shares: \$2.65, about 32% accretive.

Why it is right. The target yields 8.3% at the purchase price against a 6% after-tax debt cost and a 4% stock cost.

Follow-ups. All stock? All debt? What would purchase accounting do?

Common mistake: using B's pre-premium price to compute the shares issued.

166 Same deal, all stock instead. What changes and why?

Advanced · IB · Guide 03 §4.7 · Numerical

Answer

\$2,400m of stock at \$50 is 48 new shares, and there is no interest. Pro forma net income is \$400m over 148 shares: \$2.70, about 35% accretive, which is more accretive than the debt-and-stock version. That is because A's stock costs only 4% at a 25x P/E, cheaper than 10% debt at 6% after tax. For a high-multiple acquirer, stock is the cheap currency.

Why it is right. The cheapest funding is whichever has the lowest after-tax yield; at 25x, that is equity.

Follow-ups. Would B's shareholders accept stock? What does this do to control?

Common mistake: assuming debt is always cheaper than stock.

167 A buys T at a 25% premium: 40% cash at 2%, 30% debt at 6%, 30% stock, with \$300m of intangibles amortised over ten years. A: \$30, \$400m net income, 200m shares. T: \$20, 50m shares, \$60m net income. Tax 25%. Accretion, before and after amortisation?

Advanced · IB, PE · Guide 03 §9.1 · Numerical

Answer

Price is \$25 times 50m, \$1,250m: \$500m cash, \$375m debt, \$375m stock, which is 12.5m shares at \$30. After-tax costs: lost interest \$7.5m, debt interest \$16.9m, amortisation \$22.5m. Before amortisation, net income is \$435.6m over 212.5m shares, \$2.05, up 2.5%. After amortisation, \$413.1m over 212.5m, \$1.94, down 2.8%.

Why it is right. Purchase accounting can flip the sign; cash EPS and reported EPS diverge by exactly the amortisation.

Follow-ups. What would you tell the board? Does the shortcut agree?

Common mistake: forgetting that the amortisation is tax-effected.

168 A 15x P/E acquirer buys a business with \$10m of EBITDA using 100% debt at 10%. Maximum price without dilution?

Advanced · IB · Numerical

Answer

Treat the EBITDA as pre-tax earnings for simplicity, so after-tax earnings are \$7.5m. Debt costs 7.5% after tax. The break-even is where the target's after-tax yield equals 7.5%, so a price of \$7.5m over 7.5%, which is \$100m, or 10x EBITDA. Above that, the interest exceeds the earnings acquired and the deal dilutes.

Why it is right. Break-even is where the earnings yield equals the after-tax funding cost.

Follow-ups. What if D&A were \$2m? Why does the acquirer's 15x not matter here?

Common mistake: bringing the acquirer's P/E into an all-debt deal.

169 What factors make a deal dilutive?

Core · IB · Guide 03 §4.5

Answer

Paying a high multiple relative to the acquirer's own, especially with stock. Expensive debt or a large premium. Significant new amortisation from purchase accounting. One-off transaction and integration costs. And a target with low or negative earnings relative to the price paid.

Why it is right. Each raises the cost of funding or lowers the earnings acquired.

Follow-ups. Which is temporary and which is permanent? Can a dilutive deal be a good deal?

Common mistake: listing only "paying too much."

170 Can an accretive deal destroy value? Explain.

Intermediate · IB, PE · Guide 03 §4.6

Answer

Yes. Accretion measures next year's EPS, not value. A deal funded with cheap debt is almost always accretive, but if the acquirer pays more than the target is worth, including synergies, shareholders lose value while EPS rises. The right test is whether the return on the purchase price exceeds the cost of capital, and whether the market cap gain exceeds the premium paid.

Why it is right. EPS is an accounting result of funding choice; value depends on cash flow against price.

Follow-ups. Why do boards still focus on EPS? Give a real example.

Common mistake: treating accretion as the decision.

M&A: purchase accounting (171–178)

171 Calculate goodwill: purchase price \$1,000m, book equity \$300m, write-ups \$250m, tax 25%.

Intermediate · IB, PE · Guide 03 §3.1 · Numerical

Answer

About \$513m. Start with the \$1,000m price, subtract \$300m of existing book equity, subtract \$250m of write-ups to fair value, then add back the deferred tax liability those write-ups create, 25% of \$250m, which is \$62.5m. Goodwill is the plug: \$512.5m.

Why it is right. Goodwill is what remains after the identifiable net assets are restated to fair value, including the tax consequence of the restatement.

Follow-ups. Why does the DTL increase goodwill? What if it were an asset deal?

Common mistake: forgetting the deferred tax liability.

172 Why does a write-up create a deferred tax liability in a stock deal?

Advanced · IB, PE · Guide 03 §6.1

Answer

Because the book value of the assets rises to fair value but the tax basis does not, so future book depreciation will exceed tax depreciation and the company will pay more cash tax than the books imply. That future tax is recorded as a deferred tax liability at the tax rate, and since it is part of the net assets acquired, it increases goodwill.

Why it is right. In a stock deal, tax attributes carry over; the acquirer inherits the old tax basis.

Follow-ups. What happens in an asset deal? Does the DTL ever reverse?

Common mistake: recording a DTL in an asset purchase, where the basis steps up.

173 What is the deferred revenue haircut, and who does it hurt?

Advanced · GE, IB · Guide 03 §6.2

Answer

The target's deferred revenue is remeasured at fair value, roughly the cost to fulfil the remaining obligation plus a normal margin, which is usually less than the contract value on the books. So post-close revenue is lower than the target would have reported standalone. It hurts acquirers of subscription and software businesses most, because a growing target can appear to shrink after closing.

Why it is right. The acquirer only recognises the margin it earns on the remaining service, not the revenue the target already sold.

Follow-ups. How do acquirers present around it? Is it real economic loss?

Common mistake: treating the revenue drop as a business problem.

174 Why does an inventory step-up depress margins after closing?

Advanced · IB, PE · Guide 03 §6.3

Answer

Acquired inventory is written up to fair value, roughly its selling price less costs to sell. When it is sold in the first months, that higher carrying value flows through cost of goods sold, so gross margin is depressed until the acquired inventory is gone. It is a one-off effect and is added back in adjusted earnings.

Why it is right. The profit on the acquired inventory was effectively paid for in the purchase price.

Follow-ups. How long does it last? Where would you see it in a quality of earnings report?

Common mistake: reading the margin dip as a deterioration in the business.

175 Which intangibles are recognised separately, and over what lives?

Advanced · IB · Guide 03 §6.4

Answer

Customer relationships and contracts, typically amortised over five to fifteen years. Technology and patents over their remaining useful life. Trade names, either finite or indefinite-lived and impairment-tested. In-process R&D, indefinite until complete. Non-competes over their term. Assembled workforce is not recognised separately and falls into goodwill.

Why it is right. Anything separable or contractual is valued and amortised; what remains is goodwill.

Follow-ups. Why do acquirers report cash EPS? How is customer relationship value estimated?

Common mistake: putting everything into goodwill.

176 How are transaction fees, financing fees and earn-outs treated?

Advanced · IB, PE · Guide 03 §6.5

Answer

Advisory and legal fees are expensed as incurred, reducing equity, not capitalised into goodwill. Financing fees are capitalised against the debt and amortised over its life as interest. An earn-out is recorded at fair value at closing as contingent consideration, and changes in that fair value run through the income statement, which can produce a gain when the target underperforms.

Why it is right. Each is matched to what it relates to: the deal, the debt, or the future performance.

Follow-ups. Where do fees sit in sources and uses? Why is the earn-out gain counter-intuitive?

Common mistake: capitalising transaction fees into goodwill, which was the rule before 2009.

177 What does the combined balance sheet look like at closing?

Intermediate · IB · Guide 03 §3.3

Answer

Add the two balance sheets, then adjust: eliminate the target's equity, write its assets up to fair value and recognise new intangibles, record the deferred tax liability, add goodwill as the plug, add the new debt net of financing fees, reduce cash by the cash consideration and fees, and increase the acquirer's equity by any stock issued less expensed fees. The result must balance before projecting anything.

Why it is right. The target's equity is replaced by the consideration paid; everything else is fair value restatement.

Follow-ups. Why does the target's equity disappear? What is the most common reason the pro forma does not balance?

Common mistake: keeping the target's retained earnings.

178 Can you add the two income statements together? Walk me down the lines.

Intermediate · IB · Guide 03 §3.4

Answer

Revenue and operating costs add, less any deferred revenue haircut and plus synergies with their one-off costs. Depreciation rises for asset write-ups and amortisation rises for new intangibles. Interest adds the new debt's cost and the lost interest on cash. Tax is recomputed on the combined pre-tax income. Net income is divided by the new share count.

Why it is right. The combination is arithmetic plus the specific adjustments the deal creates.

Follow-ups. Which line is most often forgotten? What about intercompany sales between the two?

Common mistake: adding the two tax lines instead of recalculating tax.

M&A: process and public deals (179–195)

179 Stock purchase or asset purchase: which does each side prefer, and why?

Intermediate · IB, PE · Guide 03 §2.6

Answer

Buyers prefer asset purchases: they pick which assets and liabilities to take, and the tax basis steps up so they get deductible depreciation and amortisation. Sellers prefer stock sales: one level of tax, and all liabilities go with the company. Public company deals are almost always stock purchases for practical reasons; private deals are negotiated.

Why it is right. The tax step-up and liability transfer cut in opposite directions for the two sides.

Follow-ups. What is a 338(h)(10) election? How is the difference priced?

Common mistake: forgetting that the seller may face double taxation on an asset sale.

180 What is a 338(h)(10) election, and when is it available?

Advanced · PE, IB · Guide 03 §2.6

Answer

A U.S. election that treats a stock purchase as an asset purchase for tax: the buyer gets a stepped-up basis and deductible amortisation while the legal form stays a stock sale. It is available when the target is a subsidiary of a corporate seller or an S corporation, and the seller usually demands a higher price to compensate for its extra tax.

Why it is right. It splits the legal and tax treatment to give both sides what they want, at a negotiated price.

Follow-ups. How much is the step-up worth to the buyer? How is that shared?

Common mistake: claiming it is available for any public target.

181 Enterprise value \$200m, cash \$10m, debt \$40m, working capital \$4m below the peg. What is the equity price?

Intermediate · PE, IB · Guide 03 §7.4 · Numerical

Answer

\$166m: \$200m plus \$10m of cash, less \$40m of debt, less the \$4m working capital shortfall against the peg.

Why it is right. The deal is priced on an enterprise value basis; cash, debt and the working capital adjustment bridge to what the seller receives.

Follow-ups. What if working capital were \$4m above the peg? What else might be in the net debt definition?

Common mistake: adding the working capital shortfall.

182 Explain cash-free debt-free, the working capital peg and the locked box.

Advanced · PE, IB · Guide 03 §7.4

Answer

Cash-free debt-free means the price is set at enterprise value and adjusted at closing by adding cash and deducting debt, so the seller keeps the cash and pays off the debt. The working capital peg sets a normal level; delivering less reduces the price and more increases it, which stops the seller stripping working capital before closing. A locked box fixes the balance sheet at an earlier date, with the seller keeping the economics up to that date and no post-closing adjustment, which removes disputes.

Why it is right. All three exist to stop either side gaming the balance sheet between signing and closing.

Follow-ups. Which side prefers a locked box? What is leakage?

Common mistake: describing cash-free debt-free without the working capital mechanism.

183 Walk me through a sell-side process from mandate to closing.

Intermediate · IB, PE · Guide 03 §7.1

Answer

Preparation: vendor diligence, the information memorandum, a management presentation and a buyer list. Marketing: teasers out, NDAs signed, CIMs distributed. First round: indications of interest, shortlist. Second round: management presentations, data room, confirmatory diligence. Final bids with a marked-up purchase agreement and committed financing. Signing, then closing once conditions such as regulatory approval are satisfied.

Why it is right. Each stage narrows the field while giving buyers progressively more information.

Follow-ups. How long does it take? What is exclusivity and when is it granted?

Common mistake: forgetting that binding bids come with a marked-up SPA and financing commitments.

184 What is in a purchase agreement that a banker actually negotiates?

Advanced · IB, PE · Guide 03 §7.3

Answer

The price mechanism: completion accounts or locked box, the net debt definition and the working capital peg. Then the protection: representations and warranties, specific indemnities, caps, baskets and survival periods, and escrow or warranty insurance. Then the conditions: regulatory approvals, a material adverse change clause, and break fees. Lawyers draft it; the banker negotiates the economics.

Why it is right. Every one of those terms moves money between buyer and seller.

Follow-ups. Why has warranty insurance become common? What does a MAC clause actually cover?

Common mistake: "that is for the lawyers."

185 What is a break fee versus a reverse break fee?

Intermediate · IB · Guide 03 §7.6

Answer

A break fee is paid by the target to the buyer if the target walks, usually to accept a better offer. A reverse break fee is paid by the buyer to the target if the buyer fails to complete, typically because of a regulatory block or a financing failure. Both are set as a percentage of equity value and tell you who is carrying the completion risk.

Why it is right. They compensate the party left behind for the cost and disruption of a failed deal.

Follow-ups. Typical size? Why have reverse break fees grown?

Common mistake: reversing the two.

186 Offer \$30 per target share, acquirer trades at \$40. What is the exchange ratio, and what happens if the acquirer falls to \$32?

Advanced · IB · Guide 03 §8.2 · Numerical

Answer

The ratio is 0.75 acquirer shares per target share. Under a fixed exchange ratio, at \$32 the target receives only \$24 of value, so the target's shareholders bear the fall. Under a fixed value structure, the ratio would rise to 0.9375 to deliver \$30, so the acquirer issues more shares and its shareholders bear the dilution.

Why it is right. The structure decides who owns the market risk between signing and closing.

Follow-ups. What is a collar? Which would you recommend to a target's board?

Common mistake: assuming the offer value is fixed in every stock deal.

187 Fixed exchange ratio or fixed value: who bears which risk?

Advanced · IB · Guide 03 §8.2

Answer

With a fixed exchange ratio, the target's shareholders bear the risk of the acquirer's share price falling and get the upside if it rises; the acquirer knows exactly how many shares it will issue. With a fixed value, the acquirer bears the risk, issuing more shares if its price falls; the target knows what it will receive. Fixed ratios are more common because both sets of shareholders then own the combined company's fortunes together.

Why it is right. One side has certainty of shares, the other certainty of value; both cannot.

Follow-ups. How does a collar split the risk? What if the deal takes a year to close?

Common mistake: not being able to say which side prefers which.

188 What is a collar, and why use one?

Advanced · IB · Guide 03 §8.2

Answer

A band around the acquirer's share price within which the exchange ratio is fixed, and outside which it adjusts. Inside the band, the target shares the acquirer's price risk; beyond it, the value is protected. It splits the risk of a long closing period and is common when the acquirer's stock is volatile.

Why it is right. It gives each side protection against extreme moves without full transfer of the risk.

Follow-ups. What is a walk-away right? Who typically asks for the collar?

Common mistake: confusing a collar with an option strategy on the acquirer's stock.

189 One-step merger or tender offer: when do you use each?

Advanced · IB · Guide 03 §8.1

Answer

A one-step merger needs board agreement and a shareholder vote, so it suits friendly deals and stock consideration. A tender offer goes directly to shareholders and can close in weeks, followed by a second-step merger to acquire the rest, so it suits cash deals where speed matters or the board is unwilling. Many markets also require a mandatory offer once a buyer crosses an ownership threshold.

Why it is right. The two differ in speed, in who approves, and in how hostile the situation can be.

Follow-ups. What is a squeeze-out threshold? How does this work on the JSE or the Nigerian exchange?

Common mistake: treating tender offers as always hostile.

190 Name four takeover defences and how each works.

Intermediate · IB · Guide 03 §8.6

Answer

A poison pill: existing shareholders get rights to buy discounted shares if a bidder crosses a threshold, diluting the bidder. A staggered board: only a third of directors are elected each year, so control takes two elections. A white knight: a friendly alternative bidder. A leveraged recapitalisation: the target borrows and pays a special dividend, using up the debt capacity the bidder needed. Others include supermajority provisions and golden parachutes.

Why it is right. Each raises the cost or the time required to gain control.

Follow-ups. Which are shareholders hostile to? Which protect management rather than shareholders?

Common mistake: naming defences without the mechanism.

191 Which regulatory approvals matter, and what do they do to timing?

Intermediate · IB · Guide 03 §8.4

Answer

Antitrust clearance in every jurisdiction where both companies have meaningful activity, sector regulators in banking, insurance, telecoms, energy and defence, and foreign investment screening in some countries. In Africa, add regional bodies such as COMESA alongside national authorities. Approvals can take months to over a year, and a long period means longer exposure to a deal break, which is why timing drives break fees and interim covenants.

Why it is right. Regulatory risk is the main reason announced deals fail to close.

Follow-ups. What are remedies? What happens to the target's business during a long wait?

Common mistake: thinking only of the acquirer's home regulator.

192 Who typically pays more, a strategic buyer or a sponsor, and when is that reversed?

Intermediate · PE, IB · Guide 03 §2.1

Answer

A strategic buyer, usually, because it can pay for synergies and accepts a lower return than a sponsor's 20% target. A sponsor pays more when it already owns a platform in the sector and is effectively a strategic, when credit markets are generous enough that leverage does the work, or when strategics are absent, distracted or blocked by antitrust.

Why it is right. Price capacity comes from synergies and cost of capital; each buyer type has one advantage.

Follow-ups. Why might a seller still prefer a sponsor? What is a sponsor's advantage in a carve-out?

Common mistake: "strategics always win."

193 What is a carve-out, and why is it harder to buy?

Advanced · PE · Guide 03 §10 quick-fire

Answer

Buying a division rather than a whole company. It is harder because there are no standalone financials, so you have to build them and estimate the costs the division never bore: IT, finance, HR, insurance. You need transition services from the seller, new contracts with customers and suppliers, and a management team that may never have run a company. The compensation is that carve-outs are often under-managed and attract fewer bidders.

Why it is right. The business you are buying does not yet exist as a company.

Follow-ups. What are stranded costs? How long should a transition services agreement run?

Common mistake: underestimating standalone costs, which is the classic carve-out error.

194 You buy an asset for \$100m and sell it for \$100m. How did you make money?

Curveball · PE

Answer

Through the cash flow in between and through leverage. If I funded it with \$60m of debt and \$40m of equity, and the asset generated cash that repaid \$30m of debt, then at exit I receive \$100m less \$30m of remaining debt, which is \$70m on \$40m invested. Add any dividends taken during the hold. The enterprise value was flat; the equity value was not.

Why it is right. Debt paydown and cash distributions are returns even with no multiple or EBITDA growth.

Follow-ups. What IRR over five years? What if there was no debt?

Common mistake: "you didn't."

195 Name two companies that should merge, and tell me why the deal would still fail.

Curveball · IB, PE

Answer

Structure the answer rather than the names: pick two companies with a clear cost overlap or a distribution-plus-product fit, state the synergy in one sentence, then give the reason it will not happen. Common blockers: antitrust, a controlling shareholder who will not sell, a share price that makes the premium unaffordable, or a culture and management team that cannot be combined. The interviewer is grading whether you can see both the logic and the obstacle.

Why it is right. Most obvious mergers do not happen for reasons that have nothing to do with the strategic logic.

Follow-ups. Who would be the acquirer? What would the regulator require?

Common mistake: a pitch with no obstacle, or an obstacle with no pitch.

LBO: mechanics and returns (196–210)

196 Walk me through an LBO.

Core · PE, IB · Guide 04 §2.1

Answer

A sponsor buys a company using a large amount of debt secured on the company's own cash flows and assets, with the rest in equity from its fund. Over the hold, the company's cash flow repays debt while the sponsor grows EBITDA through operational improvement and acquisitions. At exit, typically in four to six years, the sponsor sells the company, repays the remaining debt, and the equity captures the increase in value plus the debt repaid.

Why it is right. The equity earns a leveraged return on the whole enterprise while putting up a fraction of the price.

Follow-ups. Where does the return come from? Why can a company support that debt?

Common mistake: describing the model steps instead of the economic idea.

197 Why does leverage raise equity returns?

Core · PE, Credit · Guide 04 §1.3

Answer

Because the equity captures 100% of the increase in enterprise value while funding only part of the price. If a company bought for \$1,000m is sold for \$1,200m, an all-equity buyer makes 20%; a buyer with \$600m of debt makes \$200m on \$400m, or 50%, before interest. Leverage works as long as the business earns more than its after-tax cost of debt, and it magnifies losses in exactly the same way.

Why it is right. Debt has a fixed claim, so all the upside and downside beyond it belongs to a smaller equity base.

Follow-ups. What return does the business need for leverage to help? What is the cost?

Common mistake: forgetting that the same maths applies to losses.

198 Debt costs 10% and tax is 25%. What unlevered return does the business need for leverage to help?

Advanced · PE, Credit · Numerical

Answer

Above 7.5%, the after-tax cost of debt. If the business earns more than 7.5% on the capital the debt funds, the excess accrues to equity and leverage raises the return. Below 7.5%, the debt costs more than it earns and leverage lowers the equity return while raising the risk.

Why it is right. Leverage is only positive when the asset return exceeds the cost of the borrowed capital.

Follow-ups. What if interest is not fully deductible? Why is the hurdle higher in practice?

Common mistake: comparing with the pre-tax 10%.

199 What are the three sources of LBO returns, and which do you underwrite?

Core · PE · Guide 04 §3.1

Answer

EBITDA growth, from revenue growth, margin improvement and acquisitions. Debt paydown, from free cash flow reducing net debt so more of the exit value goes to equity. And multiple expansion, selling at a higher multiple than you paid. I underwrite the first two, because they are within the company's control, and treat multiple expansion as upside since it depends on the market at exit.

Why it is right. Exit equity equals exit EBITDA times exit multiple less net debt; each term is one source.

Follow-ups. Which has dominated returns over the last decade? How do you attribute a return between them?

Common mistake: underwriting multiple expansion in the base case.

200 Sources and uses: EV \$1,000m including \$300m of debt to refinance, fees \$30m, minimum cash \$20m, new debt of 5.5x on \$100m of EBITDA. What equity is required?

Intermediate · PE · Guide 04 §2.2 · Numerical

Answer

\$500m. Uses: \$700m to the sellers for the equity, \$300m to refinance existing debt, \$30m of fees and \$20m of cash to the balance sheet, so \$1,050m. Sources: \$550m of new debt, leaving \$500m of sponsor equity as the plug.

Why it is right. Sources must equal uses; equity is whatever the debt does not cover.

Follow-ups. What is the equity as a share of total capitalisation? What if the sellers roll \$50m?

Common mistake: counting the \$300m of refinanced debt twice, once in EV and once as a use.

201 What changes on the balance sheet at closing?

Intermediate · PE, IB · Guide 04 §2.4

Answer

Old debt and old equity are eliminated. New debt appears, net of capitalised financing fees. Sponsor equity replaces the old equity, reduced by expensed transaction fees. Assets are written up to fair value and goodwill is recorded for the excess purchase price. Cash is set to the agreed minimum. The pro forma must balance before year one is projected.

Why it is right. The LBO is an acquisition, so purchase accounting applies exactly as in M&A.

Follow-ups. Where do financing fees sit under current rules? Why is goodwill usually large?

Common mistake: leaving the target's old equity on the balance sheet.

202 EBITDA \$100m, entry 10x, debt \$500m at 8%, exit at 10x in year 5 with EBITDA of \$127.6m and debt of \$265.9m. MOIC and IRR?

Intermediate · PE · Guide 04 §3 · Numerical

Answer

Exit enterprise value is \$1,276m; less \$266m of debt gives exit equity of about \$1,010m on \$500m invested: 2.0x. Over five years, 2.0x is roughly a 15% IRR.

Why it is right. Exit equity over entry equity is the multiple; the fifth root less one is the IRR.

Follow-ups. Split the return between the three sources. What would 20% have required?

Common mistake: subtracting the original \$500m of debt rather than the remaining balance.

203 Split that return between EBITDA growth, debt paydown and multiple change.

Advanced · PE · Guide 04 §3.2 · Numerical

Answer

Equity gain is about \$510m. EBITDA growth of \$27.6m at the constant 10x multiple contributed \$276m. Debt paydown from \$500m to \$266m contributed \$234m. Multiple change contributed nothing, since exit and entry were both 10x. The two sum to \$510m.

Why it is right. Attribution holds each driver constant in turn; with a constant multiple, the sum is exact.

Follow-ups. What if the exit were 11x? Which source is most reliable?

Common mistake: not being able to reconcile the pieces to the total.

204 The same deal at a 9x entry. What happens to the return, and why does it move so much?

Advanced · PE · Guide 04 §3.3 · Numerical

Answer

Enterprise value falls to \$900m; with the same \$500m of debt, equity falls to \$400m. Exit equity is unchanged at about \$1,010m, so MOIC rises to 2.5x and IRR to about 20%. One turn of entry multiple moved the IRR by five points, because every dollar saved at entry comes straight out of the equity cheque while the exit value is untouched.

Why it is right. Entry price is the single most powerful lever a sponsor controls.

Follow-ups. Would lenders still provide 5x on a 9x deal? What does this say about auction discipline?

Common mistake: reducing the debt proportionally, which the question did not say.

205 2.0x over five years: what IRR? 2.5x? 3.0x?

Core · PE · Guide 04 §3.4 · Numerical

Answer

About 15%, 20% and 25%. These are the reference points; every other five-year multiple can be interpolated from them. Over three years, 2x is about 26%.

Why it is right. IRR is the multiple's nth root less one; the table is memorised because paper LBOs give no time to compute it.

Follow-ups. 2x over four years? 3x over seven?

Common mistake: not having these memorised. It costs more time than any other gap.

206 \$100m of equity, five years, a 25% IRR target, exit at 15x with no debt remaining. What exit EBITDA do you need?

Intermediate · PE · Numerical

Answer

A 25% IRR over five years is about 3.05x, so exit equity of about \$305m. With no debt, that is enterprise value, so EBITDA of \$305m over 15, about \$20.3m.

Why it is right. Work backwards from the required multiple of money to the operating result that delivers it.

Follow-ups. What if \$50m of debt remained? What growth rate does that imply from \$12m today?

Common mistake: using 2.5x for 25%.

207 A sponsor doubles its money in four years. Approximate IRR, two ways?

Core · PE · Numerical

Answer

About 19%. Rule of 72: doubling in four years implies 72 over 4, or 18%. Precisely, the fourth root of two is 1.189, so about 19%.

Why it is right. Rule of 72 is a quick approximation; the root is exact.

Follow-ups. Tripling in five years? Why does the Rule of 72 work?

Common mistake: answering 25%, dividing 100% by four years.

208 \$30m EBITDA, \$20m of levered free cash flow a year, bought for \$300m with \$100m of debt. Break-even exit multiple after two years?

Advanced · PE · Numerical

Answer

Equity invested is \$200m. Two years of free cash flow repay \$40m, leaving \$60m of debt. To get \$200m back, exit enterprise value must be \$260m, which on flat EBITDA of \$30m is about 8.7x, below the 10x paid. Debt paydown alone bought nearly a turn and a half of cushion in two years.

Why it is right. Break-even is where exit equity equals entry equity; paydown lowers the multiple needed.

Follow-ups. What if EBITDA grew 5% a year? What multiple gives 20% IRR?

Common mistake: forgetting the debt paydown and answering 10x.

209 EBITDA is flat and the multiple is flat. Can you still make money?

Intermediate · PE · Guide 04 §3.5

Answer

Yes, through debt paydown. If the company generates cash and repays debt, the same enterprise value at exit leaves more for equity. A business bought at \$1,000m with \$600m of debt and sold at \$1,000m with \$300m of debt has turned \$400m of equity into \$700m. Returns are modest, since that is 1.75x, but positive.

Why it is right. Deleveraging transfers value from lenders' claim to equity's claim over time.

Follow-ups. What IRR over five years? Why do sponsors still need growth?

Common mistake: "no, you need growth or multiple expansion."

210 An extra dollar of EBITDA or an extra dollar of debt paydown?

Intermediate · PE · Guide 04 §3.6

Answer

EBITDA. A dollar of debt paydown adds a dollar to exit equity. A dollar of EBITDA adds the exit multiple in enterprise value, say ten dollars, and it also raises the cash available for paydown and the debt the company can carry. The only case where paydown wins is when the exit multiple is below one, which does not happen.

Why it is right. EBITDA is capitalised at exit; debt paydown is not.

Follow-ups. So why do sponsors care about cash conversion at all? Is a dollar of EBITDA from cost cuts worth the same as from growth?

Common mistake: hesitating. The answer is instant for anyone who understands the exit equation.

LBO: structure, exits and fund economics (211–230)

211 What makes a good LBO candidate?

Core · PE · Guide 04 §5.1

Answer

Stable, predictable cash flows to service debt. Low capital and working capital requirements so EBITDA converts to cash. A defensible market position with pricing power. Room for operational improvement or add-on acquisitions. A management team that can execute, or one the sponsor can install. A reasonable entry price, and a plausible exit.

Why it is right. Each characteristic either supports the debt or creates the growth that drives returns.

Follow-ups. Which one is non-negotiable? Give an example of a sector that fits and one that does not.

Common mistake: listing features without connecting them to debt service or value creation.

212 Which businesses should never be levered, and why?

Intermediate · PE, Credit · Guide 04 §5.2

Answer

Those whose cash flows are volatile or unpredictable: early-stage technology, commodity producers at the mercy of price, project-based businesses with lumpy revenue, and anything where a bad year could exceed the equity cushion. Also businesses with heavy reinvestment needs, because the capex competes with interest for the same cash. Leverage converts volatility into default.

Why it is right. Fixed debt service against variable cash flow is how solvent companies fail.

Follow-ups. How much leverage for a cyclical? What structure would you use instead?

Common mistake: answering with sectors rather than characteristics.

213 How do you decide how much debt a business can carry?

Advanced · PE, Credit · Guide 04 §4.1, Guide 08 §3

Answer

Start from what lenders will provide, typically a multiple of EBITDA that varies with sector and market. Then test it: interest coverage after capex in the base case and in a downside where EBITDA falls 20% to 30%, covenant headroom, and whether free cash flow can repay a meaningful share of the debt over the hold. The right level is the one that survives the downside, not the maximum on offer.

Why it is right. Debt capacity is set by the worst plausible year, not the projection.

Follow-ups. What coverage do you want after capex? What is the cost of using less leverage?

Common mistake: "as much as the banks will give."

214 How could a company exit at a higher multiple than it was bought for?

Intermediate · PE · Guide 04 §6.1

Answer

By becoming a better business: larger, more diversified, with more recurring revenue and stronger margins, so buyers pay for quality. By being repositioned into a higher-multiple category, such as a services company reframed around its software. By an exit to a strategic buyer with synergies. Or because the market simply rerated the sector, which is luck rather than plan.

Why it is right. Multiples reflect growth, risk and buyer type; change any of them and the multiple moves.

Follow-ups. Which of those would you put in a model? Why do roll-ups aim for this?

Common mistake: relying on the market rerating.

215 Your model shows 15% against a 20% target. What can you change, and what is honest to change?

Advanced · PE · Guide 04 §3

Answer

The honest levers are price, structure and plan: bid lower, use more leverage if the business can bear it, shorten the hold, add a recap, or find real operational improvements or add-ons with evidence. The dishonest levers are raising the exit multiple, inflating growth or margins beyond what the company has ever achieved, and quietly cutting capex. The test is whether I would sign my name to each assumption in front of the investment committee.

Why it is right. A model can always be made to hit 20%; the question is which assumptions the business can actually deliver.

Follow-ups. At what price does the base case reach 20%? What would you need to believe about margins?

Common mistake: raising the exit multiple first.

216 A \$100m dividend recapitalisation in year 3 on the \$500m equity deal. What does it do to IRR and to MOIC?

Advanced · PE · Guide 04 §6.2 · Numerical

Answer

MOIC is essentially unchanged: \$100m comes out in year 3 and exit equity falls by roughly \$100m because the new debt is still outstanding, so total proceeds are the same. IRR rises, from about 15% to about 16%, because part of the return arrives two years earlier. The sponsor also de-risks by recovering a fifth of its cheque.

Why it is right. IRR is time-weighted and MOIC is not; the recap changes timing, not total.

Follow-ups. What does it do to the company's risk? Why do lenders allow it?

Common mistake: saying MOIC rises because the sponsor "got \$100m extra."

217 Why does a recap raise IRR more than MOIC?

Advanced · PE · Guide 04 §6.2

Answer

Because IRR rewards cash received early and MOIC only counts the total. A recap pulls proceeds forward and pushes the same amount of debt onto the exit, so the total is flat while the timing improves. It is the same reason subscription lines flatter fund IRRs. Sophisticated investors look at both numbers, and at how much of the IRR came from timing.

Why it is right. The two measures answer different questions: how fast, and how much.

Follow-ups. When is a recap bad for the company? What does a high IRR with a low MOIC tell you?

Common mistake: treating IRR as the only return measure.

218 Management holds 10% of the equity above a \$500m threshold. Exit equity is \$900m. What does the sponsor receive?

Advanced · PE · Guide 04 §7.7 · Numerical

Answer

\$860m. The excess over the threshold is \$400m, management's 10% of that is \$40m, and the sponsor keeps the rest. If the sponsor invested \$500m, its return is 1.72x rather than the 1.8x the headline suggests.

Why it is right. Incentive plans dilute the sponsor's proceeds, so they belong in the returns model.

Follow-ups. Why a threshold rather than a straight 10%? What if there are tiers tied to MOIC?

Common mistake: taking 10% of the full \$900m.

219 How does rollover equity work, and why do sponsors want it?

Intermediate · PE · Guide 04 §7.7

Answer

The seller, often a founder or the prior sponsor, reinvests part of its proceeds into the new company alongside the fund, typically 10% to 30% of the equity. It reduces the sponsor's cheque, keeps the seller aligned with the next phase, signals confidence in the plan, and can defer tax for the seller. It appears as a source of funds at close and shares pro rata in exit proceeds.

Why it is right. A seller who rolls is betting on the same plan as the buyer.

Follow-ups. What if the seller refuses to roll? How does rollover interact with the management incentive plan?

Common mistake: treating rollover as free money to the sponsor rather than shared upside.

220 What is a buy-and-build, and where does it go wrong?

Intermediate · PE · Guide 04 §7.8

Answer

Buying a platform and adding smaller businesses at lower multiples to build scale and rerate the whole. It works when the platform can absorb acquisitions and targets are genuinely cheaper. It goes wrong when the platform's own performance is neglected, add-on prices rise as the pipeline thins, debt accumulates faster than synergies, reported EBITDA fills with unrealised savings, and the result is still a collection of separate companies at exit.

Why it is right. Multiple arbitrage only pays if integration produces one business a buyer will pay a platform multiple for.

Follow-ups. What is the blended entry multiple? How would you test integration in diligence?

Common mistake: counting the arbitrage without the integration cost.

221 A platform bought at 10x on \$100m of EBITDA; add-ons bought at 5x add \$10m of EBITDA. Blended entry multiple?

Advanced · PE · Numerical

Answer

About 9.5x. Total spent is \$1,000m plus \$50m, and total EBITDA is \$110m; \$1,050m over \$110m is 9.55x. If the whole group exits at 10x, the add-ons alone contributed \$50m of value on \$50m of cost, before any synergies.

Why it is right. Blended multiple is total price over total EBITDA, not an average of the two multiples.

Follow-ups. How much can you add at 5x before the pipeline runs out? What if add-ons are funded with debt?

Common mistake: averaging 10x and 5x to 7.5x.

222 What is a take-private, and what makes one work?

Intermediate · PE · Guide 04 §7.9

Answer

A sponsor buying a listed company. It works when the market undervalues a business that needs investment, restructuring or a longer horizon than public shareholders tolerate; when public company costs and quarterly pressure are a real burden; and when the sponsor can pay a control premium of 20% to 40% and still earn its return. The premium is paid on day one; the improvement takes years.

Why it is right. Private ownership is worth paying for only if it unlocks something public ownership prevents.

Follow-ups. Why do take-privates cluster after market falls? What is the process risk?

Common mistake: "because the stock is cheap." That alone is not a plan.

223 What is a carve-out, and why do sponsors like them?

Intermediate · PE · Guide 04 §10 quick-fire

Answer

Buying a division from a corporate parent. Sponsors like them because divisions are often under-managed inside a large group, cost savings from standalone focus are within the sponsor's control, sellers are motivated by strategy rather than price, and there are fewer competing bidders. The costs are the diligence effort, transition services, and the risk of underestimating standalone costs.

Why it is right. Carve-outs trade complexity for price and improvement potential.

Follow-ups. What are stranded costs? How do you build carve-out financials?

Common mistake: ignoring the standalone cost build.

224 Fund waterfall: \$100m committed, \$250m returned after five years, 8% preferred return, 20% carry with full catch-up. Split it.

Advanced · PE · Guide 04 §7.1 · Numerical

Answer

Investors first get their \$100m back. Then the preferred return: \$100m compounded at 8% for five years is \$146.9m, so \$46.9m. Then the GP catches up until it holds 20% of total profit: \$30m. The remaining \$73.1m splits 80/20. In total, investors receive \$220m and the GP \$30m, which is exactly 20% of the \$150m profit.

Why it is right. With a full catch-up, the hurdle only delays carry; it does not reduce it once the fund clears comfortably.

Follow-ups. What changes under a hard hurdle? What if the fund returned \$140m?

Common mistake: giving the GP 20% of profit above the preferred return, which is the hard-hurdle answer.

225 What changes under a hard hurdle with no catch-up?

Advanced · PE · Guide 04 §7.1 · Numerical

Answer

Carry applies only to profit above the preferred return. Profit is \$150m and the preferred return is \$46.9m, so the GP gets 20% of \$103.1m, about \$20.6m, and investors keep \$229.4m. The hurdle permanently reduces carry rather than deferring it.

Why it is right. Without a catch-up, the preferred return is carved out of the GP's share for good.

Follow-ups. Which do investors prefer? Why do most funds have a catch-up?

Common mistake: giving the same \$30m answer as the catch-up case.

226 What is a clawback, and when does it bite?

Advanced · PE · Guide 04 §7.2

Answer

A provision requiring the GP to return carry already received if later losses mean it ended up with more than its agreed share of total fund profits. It bites in deal-by-deal waterfalls where carry was paid on early winners before later losers were realised. It is why GPs escrow part of carry and why investors prefer whole-fund waterfalls.

Why it is right. Carry should be a share of fund profit, not of early profit.

Follow-ups. Deal-by-deal or whole-fund: which do GPs prefer? How is the clawback enforced?

Common mistake: confusing clawback with vesting of carry.

227 How does a subscription line flatter IRR?

Advanced · PE · Guide 04 §7.3

Answer

The fund borrows against investors' uncalled commitments to make investments, and calls the capital months later. IRR is measured from when investors' cash goes out to when it comes back, so delaying the call shortens the measured period and raises IRR without changing the multiple of money. Investors now look at IRR both with and without the line.

Why it is right. IRR is time-weighted; anything that shortens the investor's holding period raises it.

Follow-ups. Who bears the cost of the line? Why is MOIC immune?

Common mistake: thinking the line improves the deal rather than the reported number.

228 What is a continuation vehicle, and what is the conflict?

Advanced · PE · Guide 04 §7.4

Answer

A new fund, run by the same sponsor, that buys an asset or group of assets from an older fund. Existing investors cash out or roll. It provides liquidity when exits are slow and lets a sponsor keep a strong asset longer. The conflict is that the sponsor is both seller and buyer, so price is validated by new third-party investors, a fairness opinion and an advisory committee vote.

Why it is right. The sponsor sets the price it pays itself; governance has to substitute for a market.

Follow-ups. Why have these grown? What does a large discount to NAV tell you?

Common mistake: describing it without the conflict.

229 What is a management fee offset?

Advanced · PE · Guide 04 §7.2

Answer

Fees the sponsor charges portfolio companies for transactions, monitoring or directors are credited against the management fee investors pay, usually at 80% to 100%. Without it, a sponsor could earn twice on the same capital. It is now a standard term and a due diligence question for any investor.

Why it is right. Portfolio company fees are paid indirectly by the fund's investors, who own the companies.

Follow-ups. What fees are typically charged? How did the SEC's attention change practice?

Common mistake: confusing it with the carry catch-up.

230 How is a PE fund structured, and how does the firm actually earn money?

Core · PE · Guide 04 §1.1

Answer

A limited partnership with a ten-year life: investors are limited partners committing capital, and the firm is the general partner that invests it, usually over a five-year investment period. The firm earns a management fee of around 1.5% to 2% of commitments, and carried interest of about 20% of profits above a preferred return. The management fee runs the firm; carry is how partners get wealthy.

Why it is right. The structure aligns the GP's reward with investors' profit while covering the cost of running the firm.

Follow-ups. How much of their own money do partners invest? What is a fund's J-curve?

Common mistake: not knowing the fee levels.

PE: judgement and practice (231–250)

231 What is the difference between the preferred return and a deal's target IRR?

Intermediate · PE · Guide 04 §7.1

Answer

The preferred return, usually 8%, is the fund-level hurdle investors must earn before the GP receives carry. The target IRR, usually 20% or more, is the return a sponsor underwrites on each deal so that after fees, losses and the time capital sits uninvested, the fund still clears the hurdle by a wide margin. They are a decade apart in ambition because deals fail and fees compound.

Why it is right. Gross deal returns have to cover a lot of leakage before they become net fund returns.

Follow-ups. What is the typical gap between gross and net IRR? Why not target 12%?

Common mistake: treating 8% as the return a deal needs.

232 What does a PE associate do day to day?

Core · PE · Guide 06 §4

Answer

Screen opportunities and write first-pass views. Build and maintain models. Run diligence workstreams with advisers and synthesise their findings. Write the investment memo. After closing, own the reporting pack and model updates for portfolio companies and support the board work. In smaller funds, also help source deals. The common thread is turning information into a decision the partners can make.

Why it is right. The associate is the analytical engine between the deal team and the investment committee.

Follow-ups. What is the hardest part? How does it differ from banking?

Common mistake: describing only the modelling.

233 How do you structure an investment memo?

Intermediate · PE · Guide 05 §7

Answer

Recommendation and the deal in one page: what, how much, at what price, expected returns. Then investment thesis in three to five points. Business and market overview. Financial analysis and the model with base and downside cases. Key risks and mitigants. Value creation plan. Exit thesis. Open diligence items and what would change the recommendation. Appendices for detail.

Why it is right. The reader is a partner with ten minutes; the structure gives the decision first and the evidence after.

Follow-ups. How long should it be? What do partners actually read?

Common mistake: burying the recommendation on page twelve.

234 What would you diligence first with two weeks?

Advanced · PE · Guide 05 §7.12

Answer

The two or three things that could break the thesis. Almost always: customer retention and concentration through direct customer calls, the quality of EBITDA through a focused quality of earnings review, and the true maintenance capex requirement. Everything else can wait, be covered by warranties, or be priced.

Why it is right. Diligence is about killing the deal quickly if it deserves it, not about completeness.

Follow-ups. What would you ask a churned customer? What if management refuses customer access?

Common mistake: a list of all workstreams with no priority.

235 Which EBITDA adjustments would you reject in a quality of earnings report?

Advanced · PE, Credit · Guide 04 §8.2

Answer

Run-rate savings from actions not yet taken. Pro forma revenue from customers signed after the period. One-off costs that recur every year. Owner compensation removed without adding a market-rate replacement. Acquisition pro formas that add a full year of revenue without the costs. Capitalised expenses presented as savings. I would accept genuine one-off legal settlements, transaction costs, closed-facility costs and above-market related-party rent adjusted to market.

Why it is right. Every dollar of accepted adjustment is a dollar of price at the multiple, so the burden of proof is on the seller.

Follow-ups. How do you test a run-rate claim? What if adjustments are 30% of EBITDA?

Common mistake: accepting the seller's adjustments as a starting point.

236 What is a 100-day plan?

Intermediate · PE · Guide 04 §8.3

Answer

The actions agreed before closing and executed immediately after: install reporting and a KPI dashboard, fill finance team gaps, launch pricing and procurement work, set the budget and incentive plan, and start the acquisition pipeline if it is a buy-and-build. The value creation plan is underwritten in diligence and started in week one, not discovered in year two.

Why it is right. The first months set the tone with management and capture the improvements that pay for the premium.

Follow-ups. Who owns it? What goes wrong most often?

Common mistake: describing it as a strategy document.

237 Rank the value creation levers by reliability, and say why.

Advanced · PE · Guide 04 §8.4

Answer

Pricing first: fastest and highest margin, within management's control, limited by customer power. Procurement and cost second: measurable and controllable. Working capital third: releases cash without touching EBITDA. Add-on acquisitions fourth: buys EBITDA cheaply but needs integration capacity. Professionalisation fifth: slow, but often what earns the exit multiple. Commercial expansion last: highest upside, least predictable, so rarely in the base case.

Why it is right. Reliability tracks how much of the outcome is inside the company's control.

Follow-ups. Which would you start with in a founder-owned business? Which does a strategic buyer pay for at exit?

Common mistake: leading with revenue growth.

238 What makes a portfolio company exit-ready?

Intermediate · PE · Guide 04 §8.5

Answer

Two to three years of clean numbers and a credible management-reported EBITDA. A management team buyers want to back, including a CFO who can run a process. Diversified customers. A documented growth plan a buyer can underwrite. No open legal, tax or title issues. A capital structure that can be repaid or refinanced. Preparation starts twelve to eighteen months before launch.

Why it is right. A buyer's diligence finds everything; exit readiness means finding it first.

Follow-ups. What kills exits most often? How do you pick between a sale and an IPO?

Common mistake: thinking exit prep is about the pitch deck.

239 A portfolio company misses budget by 30%. What do you do first?

Advanced · PE · Guide 04 §8.7

Answer

Establish whether it is timing or structural, and get a thirteen-week cash flow forecast. Check covenant headroom and talk to lenders early. Decide whether management can fix it or needs strengthening. Then re-underwrite from today's facts: if I were buying this company now at its current value, would I? That decides whether the fund puts in more equity or manages for value.

Why it is right. Cash and covenants decide how much time you have; the re-underwrite decides what to do with it.

Follow-ups. When do you replace the CEO? What do you tell the investment committee?

Common mistake: starting with a new strategy rather than with cash.

240 How does a sponsor limit risk beyond the price?

Intermediate · PE · Guide 04 §5

Answer

Structure: less leverage, covenants with headroom, longer maturities. Contract: earn-outs, escrows, warranties and indemnities, a working capital peg. Alignment: seller rollover and a management incentive plan. Diligence: killing the deal before signing. And portfolio construction: concentration limits so no single deal can impair the fund.

Why it is right. Price is one lever; the others shift risk to whoever is best placed to bear it.

Follow-ups. Which of these is most useful for a founder deal? What does warranty insurance cost?

Common mistake: answering only with diligence.

241 Why would you pass on a high-quality business?

Intermediate · PE · Guide 04 §10 quick-fire

Answer

Price. If the multiple assumes everything goes right, the base case returns are below target and the downside loses money, and quality is no protection against that. A great business is the wrong investment at the wrong price; the discipline that makes a fund is saying so in an auction.

Why it is right. Returns are a function of price paid, not of the business alone.

Follow-ups. At what multiple does quality stop mattering? Have you seen a fund win by overpaying?

Common mistake: struggling to find a reason to pass.

242 A business has 60% customer concentration. How does that change your leverage and your price?

Advanced · PE, Credit · Guide 05 §7.4 · Numerical

Answer

Both go down. I would lever it to the cash flow that survives losing that customer, perhaps 2x to 3x rather than 5x, so a loss does not mean default. I would price the risk in with a lower multiple, and consider an earn-out or escrow tied to the customer's retention over two years. I would want the contract term, change-of-control protection, and the length and depth of the relationship before deciding whether to bid at all.

Why it is right. Leverage is set by the downside, and this business's downside is a single phone call.

Follow-ups. What if the customer is a government? What would make you comfortable?

Common mistake: pricing it as a normal business with a caveat.

243 How do you think about investing at the top of a cycle?

Advanced · PE · Guide 05 §7.11

Answer

Normalise earnings to mid-cycle rather than using peak EBITDA, use less leverage, and test the downside against the worst historical trough rather than a mild recession. If the deal only works on peak earnings at a peak multiple, pass. Where I would still invest: a business whose demand is not cyclical even if its sector is, or one whose price already reflects a downturn.

Why it is right. Cyclical peaks flatter both the earnings and the multiple at once.

Follow-ups. How do you know where you are in the cycle? What does a lender do differently at the top?

Common mistake: "you can't time the cycle, so ignore it."

244 Would you rather buy from a founder or from another sponsor?

Intermediate · PE · Guide 05 §7.9

Answer

Founder, if I can get comfortable with the numbers. There is more low-hanging improvement because the business has never been professionalised, and the price is often lower. The costs are harder diligence, less reliable data and founder dependence. A sponsor-owned business has clean numbers and a team, but the easy levers have been pulled and the price reflects it.

Why it is right. Founder deals trade information risk for improvement potential.

Follow-ups. How do you keep a founder engaged after they have been paid? What is a secondary buyout's typical return?

Common mistake: no preference.

245 What is the difference between growth equity and buyout, in one minute?

Core · PE, GE · Guide 07 §1

Answer

Growth equity buys minority stakes in expanding, usually profitable or near-profitable companies, with little or no leverage; returns come from growth and the analysis centres on unit economics. Buyout takes control of mature, cash-generative companies with substantial debt; returns come from EBITDA growth and deleveraging, and the analysis centres on cash flow and debt capacity. Growth equity loses money more often and wins bigger.

Why it is right. Control, leverage and stage define the strategy.

Follow-ups. Which dominates in Africa, and why? Which is harder to exit?

Common mistake: "growth equity is venture."

246 Why are most African deals minority rather than control?

Advanced · PE, GE · Guide 04 §7.10, Guide 07

Answer

Founders and families rarely want to sell control. Local-currency debt is expensive and short-dated, so leverage does not work. Companies need growth capital more than a change of ownership. And exit routes are thin, so investors prefer structured minority positions with preference terms, board rights and redemption rights that protect them without needing to own the whole business.

Why it is right. The buyout model depends on cheap debt and available exits, and Africa has neither in abundance.

Follow-ups. What governance rights make a minority position investable? How do DFIs shape this?

Common mistake: attributing it only to founder reluctance.

247 If you could ask a CEO one question before pricing the deal, what would it be?

Curveball · PE

Answer

A defensible choice with a reason. Mine would be: "What did the last customer who left tell you, and what did you change?" It tests whether the CEO knows why customers stay, whether the company learns, and whether the retention story in the CIM is true. Other strong choices: what would you do with \$20m of extra capital, or which competitor worries you and why.

Why it is right. The interviewer is testing whether you know what actually decides a deal.

Follow-ups. What answer would make you walk? What would you ask the CFO?

Common mistake: a generic question about strategy.

248 Pitch me a company you would buy, at a price.

Curveball · PE · Guide 05

Answer

Two minutes, five parts: what it does and how it makes money; why it fits a buyout, meaning cash flow, market position and levers; the price you would pay and roughly what the returns look like at that price with sensible leverage; the two biggest risks; and who buys it from you. Have one prepared, with real numbers, in a sector you can discuss for twenty minutes.

Why it is right. The question tests whether you think like an owner: business, price, risk, exit.

Follow-ups. Why would the owner sell to you? What would you do in the first hundred days?

Common mistake: a pitch with no price.

249 A competitor with unlimited capital enters the market. Does your thesis survive?

Curveball · PE, GE

Answer

Only if the business has advantages capital cannot buy quickly: switching costs, regulatory licences, distribution relationships, local knowledge, or a brand. If the moat is just being first or being cheapest, unlimited capital destroys it. The exercise is useful precisely because it separates real moats from head starts, and the honest answer for many businesses is that the thesis survives with lower margins.

Why it is right. A moat is defined by what an unlimited-capital competitor cannot replicate.

Follow-ups. Which African sectors have seen exactly this? What would you do as the incumbent?

Common mistake: "yes, because we are the market leader."

250 What is the most common reason PE deals underperform?

Intermediate · PE · Guide 04 §10 quick-fire

Answer

Overpaying, usually by underwriting an operating plan or an exit multiple the sponsor did not control. The mechanism is competitive: auctions force the winner to the most optimistic assumptions, and leverage then turns a modest miss into a poor return. The second most common is a management team that could not deliver the plan, which is often the same problem seen from a different angle.

Why it is right. Price at entry is the one decision that cannot be fixed later.

Follow-ups. How do good funds avoid it? What does the winner's curse mean in an auction?

Common mistake: "bad luck" or "the economy."

Credit and capital structure (251–275)

251 Walk me down the capital structure from revolver to common equity.

Core · Credit, PE · Guide 08 §2

Answer

Revolver and term loans, senior secured and first lien. Second lien, secured but paid after first lien. Senior unsecured or high-yield bonds. Subordinated and mezzanine debt, often with PIK and warrants. Holding company notes, structurally subordinated. Preferred equity, then common. Each step down ranks lower in a default, so each pays more.

Why it is right. Priority in a default is what determines pricing.

Follow-ups. Where does a unitranche fit? Which tranche is the fulcrum in most restructurings?

Common mistake: omitting the distinction between secured and senior.

252 Why is bank debt cheaper and shorter-dated than bonds?

Core · Credit · Guide 08 §2.2

Answer

Bank loans are senior, secured, amortising and come with tighter covenants, so lenders take less risk and accept a lower rate. Their five-to-seven-year maturities limit risk further and match the banks' own funding. High-yield bonds are usually unsecured or junior, longer-dated and fixed-rate, with only incurrence covenants and call protection, so investors demand more.

Why it is right. Price follows risk, and every feature of a loan reduces the lender's risk relative to a bond.

Follow-ups. Why do borrowers use bonds at all? What is call protection?

Common mistake: "banks are cheaper because they are banks."

253 What is a revolver, and why does a buyout need one?

Core · Credit, PE · Guide 08 §2

Answer

A committed facility the company can draw and repay as needed, paying a commitment fee on the undrawn amount and interest on the drawn balance. A buyout needs one because the term debt strips out excess cash, so the company needs a source of liquidity for seasonal working capital swings and unexpected outflows. It is drawn when things go badly, which is why lenders treat undrawn commitments as real exposure.

Why it is right. Leverage removes the cash buffer; the revolver replaces it.

Follow-ups. What is a springing covenant? How is a revolver modelled?

Common mistake: treating it as just another loan.

254 Term loan A or term loan B: what differs?

Intermediate · Credit · Guide 08 §2

Answer

Term loan A is held by banks, amortises meaningfully, has a shorter maturity and maintenance covenants. Term loan B is sold to institutional investors and CLOs, amortises about 1% a year with a bullet at maturity, is longer-dated, often covenant-lite, and usually prepayable at par after a short period. TLB is the standard instrument in leveraged buyouts.

Why it is right. The holder base determines the terms: banks want amortisation and covenants; institutions want yield and duration.

Follow-ups. Why do sponsors prefer TLB? What is a CLO?

Common mistake: not knowing TLB's amortisation is nominal.

255 What is unitranche, and why has direct lending grown?

Intermediate · Credit, PE · Guide 08 §1.3

Answer

A single senior secured loan from one lender or a small club, replacing separate first and second lien tranches, at a blended rate. Direct lending grew because post-2008 regulation made leveraged loans expensive for banks to hold, sponsors valued speed and certainty over syndicated pricing, and investors wanted floating-rate yield. Behind the scenes, the unitranche is often split into first-out and last-out pieces among lenders.

Why it is right. Regulation moved the risk from banks to funds, and sponsors paid a little more for simplicity.

Follow-ups. What are the risks of direct lending? Does the borrower see the first-out, last-out split?

Common mistake: describing unitranche as unsecured.

256 Maintenance or incurrence covenants: what is the difference, and who bears the risk in cov-lite?

Intermediate · Credit · Guide 08 §3.2

Answer

A maintenance covenant is tested regularly, typically quarterly leverage or coverage, whether or not the borrower does anything, so deterioration triggers a conversation early. An incurrence covenant only bites when the borrower acts, such as taking on debt or paying a dividend. Cov-lite loans have only incurrence covenants, so a company can decline for years before lenders get a seat at the table; the lender bears that risk.

Why it is right. Covenants are the lender's early warning system, and cov-lite removes it.

Follow-ups. Why did cov-lite become standard? How do lenders compensate?

Common mistake: thinking cov-lite means no covenants at all.

257 Covenant leverage is 5.0x on \$100m of covenant EBITDA, but reported EBITDA is \$80m. What is true leverage?

Advanced · Credit, PE · Guide 08 §5.1 · Numerical

Answer

Debt is \$500m. On reported EBITDA of \$80m, leverage is 6.25x. The \$20m of add-backs, a quarter of reported EBITDA, has flattered leverage by more than a turn. I would want to know what each add-back is and whether it will ever turn into cash.

Why it is right. Every covenant and basket runs off the defined EBITDA, so the definition is where the real leverage hides.

Follow-ups. Which add-backs are usually capped? How does this affect recovery?

Common mistake: not asking which definition a leverage figure uses.

258 Which EBITDA add-backs would you refuse as a lender?

Advanced · Credit · Guide 08 §5.1

Answer

Run-rate synergies and cost savings not yet achieved, or cap them tightly. Pro forma revenue from unsigned or newly signed customers. Recurring restructuring costs. Capitalised expenses presented as savings. And any adjustment that has appeared three years running. I would accept genuine one-off legal costs, transaction expenses and closed-facility costs, with documentation.

Why it is right. The lender is repaid from cash, and none of the refused items are cash.

Follow-ups. What cap on add-backs is typical? How do you police them after closing?

Common mistake: treating add-backs as a negotiation over a number rather than over cash.

259 EBITDA \$60m, capex \$15m, cash interest \$30m. Interest coverage and cash-flow coverage?

Core · Credit · Guide 08 test · Numerical

Answer

Interest coverage is 2.0x. Cash-flow coverage, EBITDA less capex over interest, is 1.5x. The second is the one that matters, because the capex has to be spent to keep the business running.

Why it is right. Coverage after capex measures the cash actually available for interest.

Follow-ups. What level is comfortable? What happens if rates rise 200 basis points?

Common mistake: reporting only the 2.0x.

260 Debt \$360m, cash \$40m, EBITDA \$80m. Gross and net leverage?

Core · Credit · Guide 08 test · Numerical

Answer

Gross 4.5x. Net, deducting the cash, 4.0x. Lenders often cap the cash netting, because cash can leave the business.

Why it is right. Net leverage gives credit for cash on hand; gross does not.

Follow-ups. Why cap the netting? Which figure goes in the covenant?

Common mistake: netting cash that is restricted or trapped.

261 A loan is priced at SOFR + 475 with a 1% floor. SOFR is 3.5%. All-in rate?

Core · Credit · Guide 08 §2.3 · Numerical

Answer

8.25%. SOFR is above the floor, so the floor does not apply; 3.5% plus 4.75%.

Why it is right. A floor only binds when the benchmark falls below it.

Follow-ups. What happens if SOFR falls to 0.5%? Why is LIBOR no longer quoted?

Common mistake: adding the floor to the rate.

262 Default probability 5%, loss given default 60%. Expected annual loss and minimum spread?

Advanced · Credit · Guide 08 §4.1 · Numerical

Answer

Expected loss is 3% a year: 5% times 60%. The spread has to exceed that just to break even over time, so the minimum is 300 basis points, and the lender needs more for illiquidity, uncertainty in the estimates and a return on capital. Something like 450 to 500 over the benchmark would be the starting point.

Why it is right. Spread compensates for expected loss first and everything else second.

Follow-ups. How do you estimate default probability? Why does recovery vary by seniority?

Common mistake: quoting 300 basis points as the answer rather than the floor.

263 Senior at SOFR + 500 recovers 70% in default; the junior recovers 30%. What spread should the junior pay?

Advanced · Credit · Numerical

Answer

The default probability is the same for both, but the junior loses 70 cents against the senior's 30, so its expected loss is more than double. If the senior's 500 basis points covers a 30% loss plus a risk premium, the junior needs to cover a 70% loss plus a higher premium for its position. Roughly SOFR plus 900 to 1,100, and in practice junior debt is priced by market comparables rather than derived.

Why it is right. Same borrower, different loss given default, so the spread scales with the loss.

Follow-ups. Why is the ratio more than 70 over 30? What else would the junior lender want?

Common mistake: pricing the junior off leverage alone, ignoring recovery.

264 First lien \$300m, second lien \$100m, enterprise value \$340m in distress. Recoveries, and which is the fulcrum?

Advanced · Credit · Guide 08 §7.1 · Numerical

Answer

First lien recovers \$300m, 100%. Second lien recovers the remaining \$40m, 40%. The second lien is the fulcrum: it is partly impaired, so it would be converted into the equity of the reorganised company and would control the restructuring negotiation.

Why it is right. Value is paid down the structure in order of priority, and the tranche where it runs out becomes the new owner.

Follow-ups. What if EV were \$280m? Why would a distressed investor buy the second lien at 30?

Common mistake: pro-rating the value across tranches.

265 A \$100m PIK note at 12%. Balance after three years?

Intermediate · Credit, PE · Guide 08 test · Numerical

Answer

About \$140.5m: \$100m times 1.12 cubed. The claim has grown 40% ahead of the equity without a dollar of cash leaving the company.

Why it is right. PIK interest compounds onto principal.

Follow-ups. What does this do to the equity cushion? Why would a company choose PIK?

Common mistake: adding 12% three times to get \$136m.

266 What is structural versus contractual subordination?

Advanced · Credit · Guide 08 §2.1

Answer

Contractual subordination is an agreement that one creditor is paid after another, set out in an intercreditor agreement. Structural subordination comes from where the debt sits: debt at a holding company is paid only from what the holding company receives after the operating company's own creditors are satisfied, with no agreement needed. Holdco PIK notes are structurally subordinated to everything at the operating company.

Why it is right. Priority can come from contract or from corporate structure; both matter in a default.

Follow-ups. How do upstream guarantees change this? Why do sponsors issue holdco debt?

Common mistake: treating all subordination as contractual.

267 How does an equity cure work, and what would you insist on as a lender?

Advanced · Credit, PE · Guide 08 §5.4

Answer

The sponsor injects equity to fix a covenant breach, with the cash treated either as debt repayment or as an addition to EBITDA for the test. I would limit the number of cures, ban consecutive-quarter cures, require the cash to actually repay debt rather than merely inflate covenant EBITDA, and cap the amount. Otherwise a cure masks a deteriorating business while the sponsor buys time.

Why it is right. A cure that reduces debt protects the lender; a cure that only changes a ratio does not.

Follow-ups. Worked example: covenant 5.0x, EBITDA \$50m, net debt \$270m. How much cure? Why do sponsors like the EBITDA treatment?

Common mistake: treating a cure as unconditionally good for the lender.

268 What is a liability management exercise, and how do lenders defend against one?

Advanced · Credit · Guide 08 §5.3

Answer

A borrower using loose documentation to raise new money on terms that disadvantage existing lenders: moving collateral to a subsidiary outside the credit group and borrowing against it, or issuing new debt that ranks ahead with the consent of a majority who receive better terms. Defences are tighter investment and transfer covenants, blocking positions large enough to prevent amendments, and cooperation agreements among lenders.

Why it is right. Documents that permit it will be used; the defence is in the drafting and in lender coordination.

Follow-ups. Why did documents get so loose? What is a drop-down transaction?

Common mistake: not knowing the term.

269 Borrowing base: receivables \$100m at 85%, inventory \$60m at 50%. Availability?

Intermediate · Credit · Guide 08 §6.6 · Numerical

Answer

\$115m: \$85m against receivables plus \$30m against inventory, before reserves and before excluding ineligible receivables such as those over 90 days or from related parties.

Why it is right. Asset-based availability is eligible collateral times advance rates.

Follow-ups. Why is the inventory advance rate lower? Which businesses use this structure?

Common mistake: forgetting eligibility rules do most of the work.

270 What is a debt service coverage ratio, and where is it used instead of leverage?

Intermediate · Credit · Guide 11 §3

Answer

Cash flow available for debt service divided by interest plus scheduled principal for the period. It is the standard measure in project finance and real estate, where debt is sized by the cash flow's ability to meet a fixed repayment schedule rather than by a multiple of EBITDA, and where the asset's life sets the tenor.

Why it is right. Amortising debt against a contracted cash flow is tested period by period, not by a stock measure.

Follow-ups. What minimum DSCR for a solar project? What is LLCR?

Common mistake: confusing it with interest coverage.

271 CFADS is \$11.5m, the target DSCR is 1.30x, at 8% over 15 years. How much debt can the project raise?

Advanced · Credit · Guide 11 §5.2 · Numerical

Answer

About \$75.7m. Maximum debt service is \$11.5m over 1.30, about \$8.85m a year. The annuity factor at 8% for 15 years is about 8.56, so debt capacity is \$8.85m times 8.56.

Why it is right. Debt is solved from coverage: the cash flow lenders require sets the payment, and the payment sets the loan.

Follow-ups. What if the tariff falls 10%? Why is this circular in a model?

Common mistake: sizing debt as a percentage of project cost.

272 What happens when a covenant is breached, in practice?

Intermediate · Credit · Guide 08 §3.3

Answer

Technically an event of default, letting lenders accelerate. In practice, lenders usually grant a waiver or amendment in exchange for a fee, a higher margin, tighter terms or an equity injection. Acceleration is the last resort, because forcing a sale destroys value for everyone. The breach's real function is to bring the borrower to the table while there is still value to protect.

Why it is right. Covenants are negotiating triggers, not tripwires to liquidation.

Follow-ups. When would you accelerate? What does a waiver typically cost?

Common mistake: "the lenders take the keys."

273 What is refinancing risk, and why does it kill profitable companies?

Intermediate · Credit, PE · Guide 08 §9 quick-fire

Answer

The risk that debt maturing cannot be replaced on acceptable terms. A company can be profitable and cash-generative and still fail if a bullet maturity arrives when credit markets are closed or its sector is out of favour. Most leveraged capital structures rely on refinancing rather than repayment, so the maturity wall, not the interest bill, is the real risk.

Why it is right. Bullet debt is repaid by the next lender, and the next lender may not exist.

Follow-ups. How do you mitigate it? What happened in 2008 and 2022?

Common mistake: focusing only on coverage ratios.

274 How do you lend into a market where the borrower earns local currency and the debt is in dollars?

Advanced · Credit · Guide 08 §8.2

Answer

Reduce the mismatch first: lend in local currency if it is available, index revenue to the dollar where the customer can bear it, or hedge with forwards or a cross-currency swap. Then structure around what remains: shorter tenor, lower leverage sized on a devaluation scenario, offshore collection accounts for any export revenue, and DFI guarantees or political risk insurance for convertibility. Price what cannot be structured away.

Why it is right. A 30% devaluation can raise effective leverage by half; the structure has to survive it.

Follow-ups. What does a long-dated hedge cost? What is convertibility risk?

Common mistake: pricing the risk with a higher spread and structuring nothing.

275 Would you rather lend to a high-margin asset-light business at 4x or an asset-heavy one at 5x?

Curveball · Credit · Guide 08 §7.5

Answer

It depends on recovery, not on the leverage multiple. The asset-heavy business has hard collateral whose value survives failure, so recovery is anchored. The asset-light business's value is its contracts and people, which can evaporate in distress, so recovery depends on selling it as a going concern. I would want to know cash conversion after capex and what each is worth in a downside sale before choosing; the 4x business is not automatically safer.

Why it is right. Lenders are paid from cash and repaid from collateral; leverage tells you neither.

Follow-ups. Which has better coverage after capex? Which would you put a maintenance covenant on?

Common mistake: choosing the lower multiple by reflex.

Mental maths and finance logic (276–290)

Say the method before the number. Method with a small arithmetic slip scores; a bare correct number does not.

276 21×23 , and the trick behind it.

Core · All roles · Guide 05 §6 · Numerical

Answer

483. Difference of squares: 22 squared is 484, minus one squared, so 483. Any pair straddling a round number works the same way.

Why it is right. $(a - b)(a + b) = a^2 - b^2$.

Follow-ups. 48×52 ? 19×21 ?

Common mistake: long multiplication out loud, which is slow and error-prone.

277 $1,007^2$.

Intermediate · All roles · Guide 05 §6 · Numerical

Answer

1,014,049. Expand $(1,000 + 7)^2$: one million, plus two times 7,000, plus 49.

Why it is right. $(a + b)^2 = a^2 + 2ab + b^2$.

Follow-ups. 998^2 ? 105×95 ?

Common mistake: dropping the cross term.

278 7.5% of 480, in your head.

Core · All roles · Numerical

Answer

36. Ten percent is 48, half of that is 24, and 7.5% is 5% plus 2.5%, so 24 plus 12.

Why it is right. Decompose the percentage into tenths and halves.

Follow-ups. 12.5% of 640? What is 480 as a percentage of 3,200?

Common mistake: attempting 0.075×480 directly.

279 The angle between clock hands at 3:15.

Intermediate · All roles · Guide 05 §6 · Numerical

Answer

7.5 degrees. The minute hand is at 90 degrees. The hour hand moves 30 degrees an hour, so in a quarter of an hour it has moved 7.5 degrees past the 3, to 97.5. The difference is 7.5.

Why it is right. The hour hand is not stationary; that is the whole point of the question.

Follow-ups. At 6:30? How many times a day do the hands overlap?

Common mistake: answering zero.

280 80 rises 25% then falls 20%. Where does it end, and why are the percentages different?

Core · All roles · Numerical

Answer

Back at 80: 80 times 1.25 is 100, times 0.8 is 80. The percentages differ because they are measured on different bases; a 20% fall from 100 is the same absolute move as a 25% rise from 80.

Why it is right. Percentage changes are not symmetric because the denominator changes.

Follow-ups. A stock falls 50%. What rise gets it back? Why does volatility hurt compounding?

Common mistake: answering 84 by netting 25 and 20.

281 A stock falls 40%. What rise gets it back?

Core · PM · Numerical

Answer

About 67%. From 100 to 60, you need 40 on a base of 60, which is two-thirds.

Why it is right. The required gain is the loss divided by what remains.

Follow-ups. After a 50% fall? A 90% fall? What does this say about avoiding losses?

Common mistake: answering 40%.

282 Rule of 72: at 9%, how long to double? What return doubles money in five years?

Core · All roles · Guide 05 §6 · Numerical

Answer

Eight years: 72 over 9. To double in five years, 72 over 5, about 14.4%; the exact figure is 14.9%. The rule is accurate for rates between about 5% and 15%.

Why it is right. It approximates the natural log of 2 divided by the rate.

Follow-ups. Tripling? Why does it break down at 30%?

Common mistake: not knowing it.

283 1.15 to the power of 5, approximately.

Intermediate · PE · Guide 05 §6 · Numerical

Answer

About 2.0. Rule of 72 says 15% doubles in just under five years; the exact figure is 2.01. Useful anchors: 1.1^5 is 1.61, 1.2^5 is 2.49, 1.25^5 is 3.05.

Why it is right. These are the compounding factors behind the IRR-to-MOIC table.

Follow-ups. 1.15 to the power of 3? What five-year return gives 2.5x?

Common mistake: guessing 1.75 by adding 15% five times.

284 \$100 in the bank paying \$2 a year for 19 years, then \$102 in year 20. What is the IRR?

Intermediate · All roles · Numerical

Answer

2%. The cash flows are exactly those of a 2% coupon bond bought at par, and a par bond's IRR is its coupon.

Why it is right. The principal is returned intact, so the only return is the coupon.

Follow-ups. What if you paid \$90? What if the final payment were \$120?

Common mistake: reaching for a formula rather than recognising the pattern.

285 \$100 a year forever or \$1,000 today?

Intermediate · All roles · Numerical

Answer

It depends on the discount rate. A perpetuity of \$100 is worth \$100 over the rate, so the two are equal at 10%. Below 10%, take the perpetuity; above 10%, take the \$1,000. At a 5% rate, the perpetuity is worth \$2,000.

Why it is right. Perpetuity value equals cash flow divided by the rate.

Follow-ups. What if the \$100 grows 2% a year? What if payments start in ten years?

Common mistake: choosing without asking the rate.

286 \$100 today or \$200 in four years?

Intermediate · All roles · Numerical

Answer

\$200 in four years is a doubling, which is about 19% a year. If I can earn more than 19% elsewhere, take the \$100 now; otherwise wait. For most people and most funds, 19% is hard to beat, so take the \$200.

Why it is right. Convert the choice into an implied return and compare with the opportunity cost.

Follow-ups. \$200 in seven years? How does inflation change the answer?

Common mistake: answering without the implied rate.

287 A $10 \times 10 \times 10$ cube is painted. How many small cubes have no paint?

Intermediate · All roles · Guide 05 §6 · Numerical

Answer

512. Remove one layer from each face and the unpainted interior is an $8 \times 8 \times 8$ cube.

Why it is right. Each dimension loses two, one from each side.

Follow-ups. How many have exactly one painted face? Exactly two?

Common mistake: subtracting one from each dimension instead of two.

288 \$100m of revenue, \$20m of EBITDA, prices cut 10%. What volume increase keeps EBITDA flat, if costs are all variable, and if they are all fixed?

Advanced · PE, PM · Numerical

Answer

All variable: costs are 80% of revenue, so the margin is 20 on 100; after the cut, price is 90 and cost 80, margin 10 per unit, so volume must double. All fixed: costs are \$80m regardless, so I need \$100m of revenue at \$90 per unit, an 11% volume increase. Real businesses sit between the two, which is why the cost structure is the first thing to ask about before a price cut.

Why it is right. Operating leverage determines how much volume a price change has to buy.

Follow-ups. What if costs are half fixed? What does this say about discounting in a low-margin business?

Common mistake: answering 11% for both cases.

289 Revenue grows 10%. Does EBITDA grow more or less, and what determines it?

Intermediate · All roles · Numerical

Answer

More, if a meaningful share of costs is fixed, because fixed costs do not grow with revenue and the increment falls to profit. That is operating leverage. If costs are entirely variable, EBITDA grows exactly 10%. In a downturn the same mechanism works in reverse and is what makes fixed-cost businesses dangerous to lever.

Why it is right. The fixed-cost share sets the sensitivity of profit to revenue.

Follow-ups. A business with 50% fixed costs and a 20% margin: EBITDA growth on 10% revenue growth?

Common mistake: "the same."

290 How many petrol stations are in Lagos?

Curveball · All roles · Guide 05 §9.1

Answer

Structure, then estimate. Say 20 million people and one vehicle per 20, so a million vehicles buying perhaps 40 litres a week: 40 million litres. At 100,000 litres a week per station, about 400 stations. The number I would check is litres per station, because the answer is most sensitive to it. If the interviewer says the real figure is different, revise the sensitive assumption, not the whole structure.

Why it is right. The grade is for the structure and the self-correction, not the number.

Follow-ups. How would you check it? What would you ask if you were investing in a chain?

Common mistake: a confident number with no route to it.

Advanced and curveballs

(291–300)

Graded on structure and honesty. Each entry gives a model structure and three acceptable directions rather than a single answer.

291 Tell me about a deal in the news and whether you would have done it.

Curveball · All roles · Guide 06 §4.1

Structure

What was bought, by whom, for how much and at what multiple. Why the buyer did it. How it was financed. The key risk. Your verdict, with a reason and a price. Two minutes. Prepare two: one in the firm's sector or region, one you simply find interesting.

Acceptable directions. A large strategic acquisition with a synergy case you can challenge. A sponsor take-private with a leverage and exit question. An African deal, such as a fintech acquisition or a consumer buyout, which few candidates bring.

Follow-ups. What multiple would you have paid? Who else should have bid?

Common mistake: a summary with no verdict.

292 What is the most interesting business model you have come across, and why?

Curveball · All roles

Structure

Name it, explain how it makes money in two sentences, say what is unusual about the economics, and say what could break it. Enthusiasm is graded; so is the ability to see the weakness in something you admire.

Acceptable directions. A negative working capital model that grows by consuming customer float. A marketplace with a real network effect and the subsidy it took to get there. A tower or infrastructure model where the second tenant doubles the margin.

Follow-ups. Would you invest? What multiple does it deserve?

Common mistake: a famous company with no insight about its economics.

293 Which African company would you take private, and at what price?

Curveball · PE · Guide 05 §7

Structure

Pick a listed company with cash flow, a reason public markets misprice it, and something private ownership would unlock. State the premium you would pay, the leverage the business could carry in local conditions, and the exit. Address currency and liquidity in the first minute; the interviewer is waiting for it.

Acceptable directions. A consumer staples company trading below replacement cost. A bank subsidiary of a foreign group that is exiting. A cement or logistics business with regional consolidation potential.

Follow-ups. Who lends to you? What does the government think?

Common mistake: a pitch that ignores the exit.

294 Value a business that earns \$10m a year for exactly ten years and then stops.

Advanced · All roles · Numerical

Answer

A ten-year annuity, with no terminal value. At a 10% discount rate, the annuity factor is about 6.14, so roughly \$61m. At 8% it is about \$67m. The key point is that a finite cash flow is worth far less than the perpetuity of \$100m, and that the discount rate should reflect the certainty of the ten years.

Why it is right. Concessions, contracts and patents expire; a perpetuity formula would overvalue them badly.

Follow-ups. What if payments grow 3%? What if there is a 20% chance the contract is cancelled in year five?

Common mistake: applying a terminal value.

295 Two businesses, the same \$50m of EBITDA: a manufacturer and a consultancy. Which is worth more?

Advanced · PE, PM · Numerical

Answer

Usually the consultancy, if its people stay. It has almost no capex, so more of its EBITDA becomes cash: perhaps \$37m of free cash flow against \$30m for a manufacturer spending \$10m a year on plant. But its value walks out of the door every evening, so a buyer applies a lower multiple for key-person risk. The manufacturer has hard assets and higher leverage capacity. The honest answer compares cash conversion against durability.

Why it is right. Equal EBITDA hides different capital intensity and different risk.

Follow-ups. Which can carry more debt? Which would a strategic buyer pay more for?

Common mistake: choosing one without naming the trade-off.

296 A company earns a 6% return on capital with a 9% cost of capital but is growing 20%. Is growth good?

Advanced · PM, PE · Guide 01 §7.3 · Numerical

Answer

No. Every dollar invested earns 6% and costs 9%, so growth destroys three cents of value per dollar deployed, and 20% growth destroys it faster. The right response is to stop investing and return capital, or fix the returns first. A company like this on a growth multiple is a short candidate.

Why it is right. Growth creates value only when the return on new capital exceeds its cost.

Follow-ups. What if returns on new capital are 15% even though the average is 6%? How would you check?

Common mistake: treating growth as good by definition.

297 Everything in the market is expensive. Where do you look?

Curveball · PM, PE

Structure

Where attention is lowest and complexity is highest: small caps, spin-offs, post-restructuring equities, sectors that just disappointed, and markets with thin coverage including much of Africa. Then say what you do if nothing meets the bar: hold cash and wait, which is a position too.

Acceptable directions. Complexity and neglect as sources of mispricing. Emerging markets as an under-followed opportunity set, with the currency caveat. Patience as a strategy.

Follow-ups. How long would you wait? What is the cost of holding cash?

Common mistake: "buy the best companies anyway."

298 What would you do with \$1m of your own money for ten years?

Curveball · All roles · Guide 12 §10

Structure

Start with the objective and the constraints: ten years, no liquidity need, your own risk tolerance. Then a coherent allocation with reasons: mostly equities for a ten-year horizon, some diversification, low cost. Say what you would not do and why. A defensible plan with reasons beats a clever one.

Acceptable directions. A low-cost global equity core with a small allocation you manage yourself. A tilt towards a market or theme you understand, with the concentration risk acknowledged. A deliberate cash reserve for opportunities.

Follow-ups. Why not all in one stock you love? How would your answer change for a pension fund?

Common mistake: a list of stocks.

299 Teach me something I do not know, in two minutes.

Curveball · All roles · Guide 06 §6.11

Structure

Pick something you know well, ideally outside finance. What it is in one sentence, why it matters in one sentence, one example, one surprising detail. Stop at two minutes. The test is clarity and whether you can hold attention, not the topic.

Acceptable directions. How something you have worked on actually functions. A piece of history or science with a clean explanation. A rule of a sport or game most people misunderstand.

Follow-ups. Why did you choose that? What did you leave out?

Common mistake: choosing a finance topic the interviewer knows better than you.

300 What is the biggest risk nobody in this market is pricing?

Curveball · All roles

Structure

Name one risk, say why the market underweights it, say what it would do to the assets you cover, and say how you would position. A real view defended briefly beats a survey. Be ready for the interviewer to argue the other side.

Acceptable directions. A correlation the market assumes is stable, such as stocks and bonds. A refinancing wall in a specific sector. A currency or political event in a market you follow. Concentration in a handful of index names.

Follow-ups. Why has the market not priced it? What would make you wrong?

Common mistake: "recession" with no mechanism.

The five mock interviews

Timed sets drawn from the bank in the order an interviewer would run them: warm-up, technical core, numerical block, one question just beyond the candidate. Score full, half or zero per question; full marks require the first follow-up handled.

Mock	Questions, in order	Time
Investment banking technical (20)	1, 4, 9, 13, 17, 21, 57, 65, 74, 70, 86, 87, 90, 122, 125, 131, 160, 162, 171, 195	35 min
Private equity technical (20)	8, 14, 36, 62, 89, 196, 199, 200, 202, 203, 204, 208, 210, 213, 224, 235, 241, 242, 248, 250	40 min
Private credit (15)	8, 22, 39, 251, 256, 257, 259, 261, 262, 264, 265, 267, 271, 273, 275	30 min
Growth equity (15)	21, 25, 43, 44, 63, 66, 105, 114, 173, 245, 246, 249, 286, 289, 292	30 min
Public markets (15)	40, 46, 54, 73, 76, 83, 100, 102, 104, 119, 120, 153, 281, 296, 300	30 min

A candidate should score 80% or better on the mock for their target role, twice, before recruiting. Growth equity candidates should add the cap table and preference questions in Guide 07 Sections 03 and 04, and public markets candidates the performance measures in Guide 12 Section 07, neither of which this bank repeats.

Role study paths

The must-know set for each role across all 300 questions. Everything else in the bank is useful; these are the questions a first round assumes.

Role	Must-know questions	Count
Investment banking	1–11, 13–21, 23, 28–36, 38, 41–42, 46–48, 50–51, 56–67, 69–72, 74–77, 81, 84, 86–99, 103, 107, 110, 115–116, 121–128, 130–139, 144–146, 152, 156–172, 175–191, 276–282	~150
Private equity	1–19, 21–27, 31–40, 46, 49–53, 56–58, 62–66, 70–72, 76–79, 82, 86–89, 97, 99–101, 108–110, 121–125, 131–136, 140–143, 148, 151, 156, 158–161, 165–172, 179–183, 192–194, 196–250, 251–260, 265, 267, 273, 276–290, 293–296	~190
Private credit	1–11, 14–15, 22, 26–29, 32–40, 49, 51, 53–54, 56–58, 62–64, 70–72, 79, 82, 85, 86, 89, 108, 122–125, 145–146, 196–201, 211–213, 235, 242, 251–275, 276–284, 289, 295	~115
Growth equity	1–8, 16–21, 24–25, 32–38, 40–46, 56–58, 63–67, 70–73, 77, 81, 86, 89–90, 99–101, 105, 111–114, 121–126, 135–136, 145–146, 153–155, 173, 245–246, 249, 276–283, 286–292, 296	~105
Public markets	1–13, 16, 19–25, 30–31, 33–36, 38, 40–48, 50, 54–61, 63–78, 81–85, 86–90, 93, 99–104, 106–107, 111–113, 116, 119–137, 143–147, 149, 151–155, 170, 276–283, 286, 289, 291–292, 296–300	~165

Questions 55, 85, 118–120, 154–155, 194–195, 247–250, 275, 290–300 are graded on structure and apply to every role.

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