

Paper LBO: Written Answer

Scroll down to see the written answer for the BrainRot Capital Case

The paper LBO can be answered in 5 key steps.

1. Writing Down Assumptions & Repeating Them to the Interviewer
2. Calculating a Sources & Uses
3. Spreading an Income Statement
4. Calculating Free Cash Flow
5. Calculating Exit Enterprise Value and Equity Value. Applying MOIC Math

-1. Writing Down Assumptions & Repeating Them to the Interviewer-

This is incredibly important. You do not want to misinterpret key information and screw up your answer. After all, the interviewer is likely just staring at an answer key and is not directly listening to your response. Take a good 2 minutes here to make sure you have the right information before proceeding.

This also sets up interviewer engagement for the remainder of the Paper LBO walk through.

-2. Calculating A Sources and Uses-

Sources: Debt + Equity

Uses: Purchase Price

Paper LBOs rarely include other S&U components such as transaction costs, but of course be mindful if that assumption is provided. Speak the S&U calculation out loud.

"I calculate the purchase price by applying the 10x LTM EBITDA multiple to 2024 EBITDA; this is my entire use of funds. I calculate my sources by applying the 6 turns of debt to 2024 EBITDA, which leaves me with 4 turns of equity."

-3. Spreading an Income Statement-

This is arguably the hardest part of a paper LBO. The finance within this step is minimal, just a basic understanding of an income statement. However, the mental math can get tricky!

You should memorize compounding 10% over 5 years. 110, 121, 133, 146, 160. Round to the nearest whole number, don't overcomplicate this. For any other % increase, you can just take 1% of the base number and then multiply it by the percent you need to calculate. For example: $\$112 \times 37\% = ?$ My process: $\$112 \times 1\% = \sim \$1.1 \times 37 = \sim \$40$. That math is good enough.

Otherwise, you're walking from revenue to net income. Out loud. Don't speak through every single calculation. Instead, say things like "Ok, first I'm going to spread revenue over 5 years using the 10% growth rate. I'll just take a minute here to scratch this out....By year 5, I'm seeing revenue of \$160mm. Great, now I'm going to calculate EBITDA over the next 5 years...I'm seeing \$80mm of EBITDA by year 5. Now, I'm going to take a few minutes to incorporate the other assumptions to get from EBITDA to Net Income.... In year 1, I'm seeing Net Income of \$X and by year 5 I'm seeing Net Income of \$X."

The key line items are: Revenue, EBITDA, EBIT, EBT, and Net Income. Avoid taking “shortcuts” by going from EBITDA directly to net income, this will make things harder for you to quickly process and accurately calculate.

^remember to include interest expense during your income statement calculation!

-4. Calculating Free Cash Flow-

Free Cash Flow = NI + D&A – Capex – change in NOWC. Just spread it over 5 years, you did all of the hard work calculating the income statement. Follow the same spoken walk-through process as used when spreading the income statement.

-5. Calculating Exit Enterprise Value and Equity Value. Apply MOIC Math-

The final step is quick. You apply the exit multiple to your LTM or NTM final year EBITDA. That yields your base Enterprise Value. Then, you sum up all intermittent free cash flow to that year 5 figure. If you don’t do this, then you will not be able to apply MOIC math because you will be effectively realizing dividends between years 0 and 5.

With your total Enterprise Value, you’ll deduct outstanding debt to arrive at your Equity Value. $\text{Equity Value} / \text{Purchase Equity} = \text{MOIC}$.

MOIC math you must remember (based on a 5-year investment horizon with no intermittent free cash flow granted to equityholders):

- 2.0x MOIC = 15% IRR
- 2.5x MOIC = 20% IRR
- 3.0x MOIC = 25% IRR

-The BrainRot Capital Case Study-

-1. Writing Down Assumptions & Repeating Them to the Interviewer-

-Operating Assumptions-

- 2024 Revenue: \$100mm, 10% growth rate per year
- LTM EBITDA margin of 50%. Flat over 5 years
- D&A + Capex = 20% of revenue each
- No change in NOWC
- 25% tax rate

-Transaction Assumptions-

- 10x LTM EBITDA entry + exit
- 6x debt, 10% annual interest, bullet repayment

-2. Calculating A Sources and Uses-

-Sources-

- 6x debt = \$300mm
- 4x equity = \$200mm

-Uses-

- 10x LTM EBITDA = \$500mm

-3. Spreading an Income Statement-

Year:	0	1	2	3	4	5
Revenue	\$100	\$110	\$121	\$133	\$146	\$160
EBITDA:	\$50	\$55	\$60	\$65	\$73	\$80
-D&A		(22)	(24)	(26)	(28)	(32)
EBIT:		\$33	\$36	\$39	\$45	\$48
-Interest		(30)	(30)	(30)	(30)	(30)
EBT:		\$3	\$6	\$9	\$15	\$18
-Taxes		(1)	(2)	(2)	(4)	(5)
Net Income:		\$2	\$4	\$7	\$11	\$13

Remember, memorize 10% compounded over 5 years. Round everything to the nearest whole number, breakout all key line items to compartmentalize calculations + prevent forgetting lines such as interest expense.

-4. Calculating Free Cash Flow-

Year:	0	1	2	3	4	5
Net Income		\$2	\$4	\$7	\$11	\$13
+D&A		22	24	26	28	32
-Capex		(22)	(24)	(26)	(28)	(32)
-change in NOWC		0	0	0	0	0
Levered FCF:		\$2	\$4	\$7	\$11	\$13

D&A and capex net out, and there was no assumption for change in net operating working capital. In this case, net income = levered free cash flow which saves you ~1 minute of extra time.

-5. Calculating Exit Enterprise Value and Equity Value. Apply MOIC Math-

Year:	0	1	2	3	4	5
Exit LTM EBITDA						\$80
Exit Multiple						10x
Enterprise Value:						\$800
-Debt						(300)
+Cash						37
Exit Equity Value:						\$537
MOIC:						2.7x
IRR:						~23%

Calculate the base exit enterprise value using 10x LTM Year 5 EBITDA = \$800mm. Deduct \$300mm of outstanding debt, add back \$37mm of cash (cumulative value of LFCF over 5 years). \$537mm is your exit equity value.

$\$537\text{mm} / \$200\text{mm} = \sim 2.7\text{x}$. 2.7x is more than 2.5x (20% IRR), but less than 3.0x (25% IRR). So, 23% IRR seems like a good fit.