

Question 1

L2R41TB-AC018-1512

LOS: LOS-9150

Lesson Reference: Lesson 3: Valuation Issues in Buyout and Venture Capital Transactions and Exit Routes

Difficulty: medium

Company A has a unique and commercially viable product, however, it has not yet come to market. Which method of reaching a value conclusion will a provider of equity funds *most likely* apply when attempting to purchase Company A?

- ☒ Negotiation.
- ☐ Intrinsic value.
- ☐ Relative market value.

Rationale

✔ Negotiation.

Intrinsic value alone will be unlikely because there are no cash flows. Relative market valuation will be unlikely because the company has a unique product that will not compare reliably enough to find a benchmark. Negotiation will likely involve more than one baseline or top dollar estimate of value and is the most likely option.

Rationale

✘ Intrinsic value.

Intrinsic value alone will be unlikely because there are no cash flows. Relative market valuation will be unlikely because the company has a unique product that will not compare reliably enough to find a benchmark. Negotiation will likely involve more than one baseline or top dollar estimate of value and is the most likely option.

Rationale

✘ Relative market value.

Intrinsic value alone will be unlikely because there are no cash flows. Relative market valuation will be unlikely because the company has a unique product that will not compare reliably enough to find a benchmark. Negotiation will likely involve more than one baseline or top dollar estimate of value and is the most likely option.

Question 2

L200-PQ0046-1412

LOS: LOS-9140

Lesson Reference: Lesson 2: Contrasting Valuation in Venture Capital and Buyout Settings

Difficulty: medium

Which of the following characteristics is not generally associated with a venture capital investment?

- ☐ Weak balance sheet
- ☐ New management
- ☒ Bought at auction

Rationale

This Answer is Correct

Most buyout transactions are auctions, involving multiple potential acquirers, whereas most private equity deals are the result of the relationship between the entrepreneur and the investor.

Question 3

L2AI-PQ4013-1410

LOS: LOS-9200

Lesson Reference: Lesson 5: Risks and Costs of Investing in Private Equity and Evaluating Fund Performance

Difficulty: medium

An analyst gathered the following information regarding Alpha Fund:

Committed capital = \$300 million

Cumulative distributions = \$180 million

Cumulative invested capital = \$250 million

NAV after distributions = \$371 million

DPI and TVPI are *closest to*:

DPI TVPI

A 0.6 1.837

B 0.72 1.484

C 0.72 2.204

☐ Row A

☐ Row B

☒ Row C

Rationale

✔ **This Answer is Correct**

DPI = Cumulative distributions / PIC

DPI = \$180m / \$250m = **0.72**

RVPI = NAV after distributions / PIC

RVPI = \$371m / \$250m = 1.484

Therefore, TVPI = 0.72 + 1.484 = **2.204**

Question 4

L2AI-TB0010-1412

LOS: LOS-9140

Lesson Reference: Lesson 2: Contrasting Valuation in Venture Capital and Buyout Settings

Difficulty: medium

Which of the following type of private equity investment is most likely to involve the use of auctions with multiple potential acquirers rather than proprietary transactions being the result of relationships?

- ☒ Buyout.
- ☐ Venture capital.
- ☐ Both buyout and venture capital employ a similar use of auctions in deal making.

Rationale

This Answer is Correct

Larger buyout deals are more likely to be transacted through auctions involving multiple potential acquirers. In the venture capital market, most transactions are proprietary, being the result of relationships between venture capitalists and entrepreneurs.

Question 5

L2AI-ITEMSET-PQ4006-1411

LOS: LOS-9170

Lesson Reference: Lesson 4: Private Equity Fund Structures, Due Diligence, and Valuation

Use the following information to answer the next 2 questions:

Gamma Equity Fund has committed capital of \$300 million. The GP is entitled to receive carried interest of 20%. The fund made the following four investments at the beginning of 2012 and exited them all at the end of 2012:

Portfolio Company	Amount Invested	Proceeds upon Exit
A	\$32m	\$41m
B	\$64m	\$87m
C	\$75m	\$84m
D	\$21m	\$28m

i.

Given a hurdle rate of 30%, the amount of carried interest paid on a deal-by-deal basis is *closest to*:

- ☒ \$6 million
- ☐ \$9.6 million
- ☐ \$3.6 million

Rationale

✓ **This Answer is Correct**

IRR of investment in Company A = $(\$41m / \$32m) - 1 = 28.13\%$

IRR of investment in Company B = $(\$87m / \$64m) - 1 = 35.94\%$

IRR of investment in Company C = $(\$84m / \$75m) - 1 = 12.00\%$

IRR of investment in Company D = $(\$28m / \$21m) - 1 = 33.33\%$

Since the hurdle rate is 30%, carried interest will only be paid on Investments B and D.

Carried interest on investment in Company B = $(\$87m - \$64m) \times 20\% = \$4.6m$

Carried interest on investment in Company D = $(\$28m - \$21m) \times 20\% = \$1.4m$

Total carried interest = $\$4.6m + \$1.4m = \text{\$6 million}$

ii.

The following year, the fund incurred a loss \$5 million. Given that the GP is still entitled to carried interest of 20% on a deal-by-deal basis, and that a clawback provision with an annual true-up applies, which of the following statements is *least accurate*?

- ☐ The GP will not be paid any carried interest.
- ☒ The GP will be paid carried interest amounting to \$1 million.
- ☐ The GP will have to pay the LPs \$1 million.

Rationale

This Answer is Correct

The GP will not be paid any carried interest. In fact, he will have to return \$1 million ($=\$5 \text{ million} \times 0.20$) to the LPs because of the loss incurred during the year.

Question 6

L2R41TB-AC019-1512

LOS: LOS-9160

Lesson Reference: Lesson 3: Valuation Issues in Buyout and Venture Capital Transactions and Exit Routes

Difficulty: medium

Private equity fund (“the Fund”) is reaching the end of an investment's expected life of 5 years. The Fund has been approached by the existing management team. This is the team's first investment and they are relatively young. The Fund has also been approached by an investment banker eagerly wanting to launch an initial public offering. Despite the recent lack of new offerings, the banker is optimistic an IPO would bring an acceptable share price. Finally, the Fund was approached by another well-established private equity firm which believes the portfolio firm will provide a high level of synergies. Based on this information, the Fund will *most likely* exit the investment via:

- ☐ management buyout.
- ☐ initial public offering (IPO).
- ☒ secondary market transaction.

Rationale

management buyout.

The Fund will likely sell the portfolio firm to the company with a strategic interest because it will have a synergy gain that it can share through a higher purchase price. A young management team with minimal experience may have a tough time obtaining the necessary financing to purchase the company. An IPO is generally not desirable in a slow IPO market.

Rationale

initial public offering (IPO).

The Fund will likely sell the portfolio firm to the company with a strategic interest because it will have a synergy gain that it can share through a higher purchase price. A young management team with minimal experience may have a tough time obtaining the necessary financing to purchase the company. An IPO is generally not desirable in a slow IPO market.

Rationale

secondary market transaction.

The Fund will likely sell the portfolio firm to the company with a strategic interest because it will have a synergy gain that it can share through a higher purchase price. A young management team with minimal experience may have a tough time obtaining the necessary financing to purchase the company. An IPO is generally not desirable in a slow IPO market.

Question 7

L2AI-PQ4019-1410

LOS: LOS-9220

Lesson Reference: Lesson 6: Valuation of Venture Capital Deals

Difficulty: medium

The directors of Blackfish Pvt. Ltd. forecast the following three scenarios for the company in 3 years:

- The company's earnings amount to \$15 million and the appropriate exit price-to-earnings multiple is 7. The probability of this scenario occurring is 55%.
- The company's earnings amount to \$8 million and the appropriate exit price-to-earnings multiple is 4. The probability of this scenario occurring is 25%.
- The company fails to achieve its goals and has to liquidate its assets in Year 3 for \$3 million. The probability of this scenario occurring is 20%.

The expected terminal value of the company is *closest to*:

- ☐ \$46.67 million
- ☐ \$54.25 million
- ☒ \$66.35 million

Rationale

✔ **This Answer is Correct**

Terminal value in scenario 1 = $\$15\text{m} \times 7 = \105 million

Terminal value in scenario 2 = $\$8\text{m} \times 4 = \32 million

Terminal value in scenario 3 = $\$3 \text{ million}$

Expected terminal value = $(\$105\text{m} \times 0.55) + (\$32\text{m} \times 0.25) + (\$3 \times 0.20) = \mathbf{\$66.35 \text{ million}}$

Question 8

L2R41TB-AC007-1512

LOS: LOS-9210

Lesson Reference: Lesson 6: Valuation of Venture Capital Deals

Difficulty: medium

A VC firm reaches an agreement with the owners of an early-stage firm that the owner's interest is worth \$2 million. The VC will invest \$1 million. The VC's proportionate share of the firm after its investment will be *closest to*:

- ☒ 33%
- ☐ 50%
- ☐ 67%

Rationale

✓ 33%

The pre-money value is \$2 million. The VC invests \$1 million for a post-money valuation of \$3 million. The VC's proportionate share based on the investment of \$1 million is:

$$\%VC \text{ share} = \frac{I}{POST} = \frac{\$1 \text{ million}}{(\$2 \text{ million} + \$1 \text{ million})} = 33\%$$

Rationale

✗ 50%

The pre-money value is \$2 million. The VC invests \$1 million for a post-money valuation of \$3 million. The VC's proportionate share based on the investment of \$1 million is:

$$\%VC \text{ share} = \frac{I}{POST} = \frac{\$1 \text{ million}}{(\$2 \text{ million} + \$1 \text{ million})} = 33\%$$

Rationale

✗ 67%

The pre-money value is \$2 million. The VC invests \$1 million for a post-money valuation of \$3 million. The VC's proportionate share based on the investment of \$1 million is:

$$\%VC \text{ share} = \frac{I}{POST} = \frac{\$1 \text{ million}}{(\$2 \text{ million} + \$1 \text{ million})} = 33\%$$

Question 9

L2R41TB-AC012-1512

LOS: LOS-9140

Lesson Reference: Lesson 2: Contrasting Valuation in Venture Capital and Buyout Settings

Difficulty: medium

Which company would *most likely* receive venture capital funding rather than another type of private equity funding?

- ☒ An early-stage company with a viable product.
- ☐ A public company being taken private by the managers.
- ☐ A later-stage company seeking second round financing to acquire a small competitor.

Rationale

☒ **An early-stage company with a viable product.**

Venture capital transactions apply to financing a company in the developmental stages, and may involve a majority or minority share. Buyout transactions, including both leveraged buyouts (LBOs) and management buyouts (MBOs) of public companies, focus on companies that have good cash flow (necessary to pay the high debt from the leveraged purchase) and viable products. Later-stage companies seeking to make acquisitions may take on another equity partner as an investor, but at this point it is less likely to be considered venture capital.

Rationale

☐ **A public company being taken private by the managers.**

Venture capital transactions apply to financing a company in the developmental stages, and may involve a majority or minority share. Buyout transactions, including both leveraged buyouts (LBOs) and management buyouts (MBOs) of public companies, focus on companies that have good cash flow (necessary to pay the high debt from the leveraged purchase) and viable products. Later-stage companies seeking to make acquisitions may take on another equity partner as an investor, but at this point it is less likely to be considered venture capital.

Rationale

☐ **A later-stage company seeking second round financing to acquire a small competitor.**

Venture capital transactions apply to financing a company in the developmental stages, and may involve a majority or minority share. Buyout transactions, including both leveraged buyouts (LBOs) and management buyouts (MBOs) of public companies, focus on companies that have good cash flow (necessary to pay the high debt from the leveraged purchase) and viable products. Later-stage companies seeking to make acquisitions may

take on another equity partner as an investor, but at this point it less likely to be considered venture capital.

Question 10

L2AI-TBB207-1412

LOS: LOS-9200

Lesson Reference: Lesson 5: Risks and Costs of Investing in Private Equity and Evaluating Fund Performance

Difficulty: medium

A private equity fund has a DPI of 0.65x and a TVPI of 1.4x. If paid-in capital of the fund is \$100 million, the NAV of the fund is closest to:

- ☐ \$65 million.
- ☒ \$75 million.
- ☐ \$140 million.

Rationale

 **This Answer is Correct**

Residual value to paid-in capital (RVPI) = $TVPI - DPI = 1.4 - 0.65 = 0.75x$

Since $RVPI = NAV / \text{Paid-in capital}$ and Paid-in capital is \$100 million, the NAV of the fund must be \$75 million.

Question 11

L200-PQ0043-1412

LOS: LOS-9120

Lesson Reference: Lesson 1: Introduction to Valuation Techniques in Private Equity Transactions

Difficulty: medium

Which of the following is not a source of value creation in private equity?

- ☐ Ability to reengineer a company
- ☒ Indirect control over management
- ☐ Better alignment of managers' interests

Rationale

This Answer is Correct

Private equity managers generally have direct control over company managers, which is usually a condition of any private equity investor.

Question 12

L2AI-TBB206-1412

LOS: LOS-9170

Lesson Reference: Lesson 4: Private Equity Fund Structures, Due Diligence, and Valuation

Difficulty: medium

Paul Childs, CFA, is an equity analyst engaged in a conversation with a work colleague, Benedict Wilson, regarding the structure of private equity funds. Wilson makes the following two statements:

Statement 1:

“Clawback provisions are often negotiated into limited partnership agreements in order to protect the GP from unfair distribution of profits to the LPs.”

Statement 2:

“Two main types of waterfall structures exist: deal-by-deal and total return waterfalls. GPs will often prefer total return waterfall structures since it allows for earlier distribution of carried interest to the GP.”

How many of Wilson's statements are correct?

- ☒ Zero.
- ☐ One.
- ☐ Two.

Rationale

This Answer is Correct

Statement 1 is incorrect since clawback protects LPs from unfair distribution of profits to the GP. Statement 2 is incorrect since deal-by-deal waterfall structures distribute profits to GPs sooner.

Question 13

L200-PQ0044-1412

LOS: LOS-9130

Lesson Reference: Lesson 1: Introduction to Valuation Techniques in Private Equity Transactions

Difficulty: medium

With respect to aligning the interests of managers and owners, which form of ownership would do a better job?

- ☒ Private ownership
- ☐ Public ownership
- ☐ Neither

Rationale

This Answer is Correct

Private ownership is the best way to align the interests of managers and owners. Private firms have greater flexibility than public firms and, more important, do not ask managers to focus on the short-term performance of company stock, which can improve their capital allocation decisions.

Question 14

L2R41TB-AC009-1512

LOS: LOS-9210

Lesson Reference: Lesson 6: Valuation of Venture Capital Deals

Difficulty: medium

A target firm and its VC funds provider agree on the following information:

Current # of shares in target	1,000,000
Amount of VC investment required	\$5,000,000
Terminal value at exit	\$50,000,000
Periods until exit	5
VC required return (all rounds of financing)	50%

In addition, the VC and target firm agree that additional financing of \$3 million will be required at the beginning of year 3 (end of year 2).

The per share price of shares issued to the second round provider of financing will be *closest to*:

- ☐ \$0.11
- ☐ \$0.25
- ☒ \$0.56

Rationale

✗ **\$0.11**

Start by determining the POST and PRE value for the new financing round. $POST_2$ is the terminal value discounted for the remaining periods at the VC required discount rate. $F_2\%$ is the required ownership of the second round funder (VC2). PRE_2 is $POST_2$ less the new investment.

$$POST_2 = \$50,000,000 / (1 + 0.50)^3 = \$14,814,815$$

$$F_2\% = \$3,000,000 / \$14,814,815 = 20.25\%$$

$$PRE_2 = \$14,814,815 - \$3,000,000 = \$11,814,815$$

PRE_2 is discounted to $POST_1$ to get the post money valuation at the time of the first round. F_1 , which is the first round investment as a percentage of $POST_1$, is the required ownership for the first round funder (VC1). This amount will be diluted. The F_1 percentage is used to calculate the number of shares that VC1 requires to maintain their desired ownership fraction; the number of shares is denoted by VC1 # Shares. From this number, the price per share for VC1 is calculated.

$$POST_1 = \$11,814,815 / (1 + 0.50)^2 = \$5,251,029$$

$$F_1\% = \$5,000,000 / \$5,251,029 = 95.22\%$$

$$VC1 \# \text{ Shares} = 1,000,000 \times 0.9522 / (1 - 0.9522) = 19,918,033$$

Per – share price paid in the first round is \$0.25 (\$5,000,000/19,918,033)

VC2 # Shares denotes the number of new shares required by VC2 to obtain their desired ownership percentage. Note **total shares for round one** must be taken into consideration. Finally, the price per share in the second round equals the second round investment divided by VC2 # Shares.

$$VC2 \# \text{ Shares} = (19,918,033 + 1,000,000) \times 0.2025 / (1 - 0.2025) = 5,311,475$$

Per – share price paid in the second round is \$0.56 (\$3,000,000/5,311,475)

\$0.11 uses the total number of shares in the denominator to determine the price per share in the second round, not just the VC2 # Shares. \$0.25 is the per share price in the first round.

Rationale

✖ \$0.25

Start by determining the POST and PRE value for the new financing round. $POST_2$ is the terminal value discounted for the remaining periods at the VC required discount rate. $F_2\%$ is the required ownership of the second round funder (VC2). PRE_2 is $POST_2$ less the new investment.

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\$0.11 uses the total number of shares in the denominator to determine the price per share in the second round, not just the VC2 # Shares. \$0.25 is the per share price in the first round.

Rationale

✔ \$0.56

Start by determining the POST and PRE value for the new financing round. POST_2 is the terminal value discounted for the remaining periods at the VC required discount rate. $F_2\%$ is the required ownership of the second round funder (VC2). PRE_2 is POST_2 less the new investment.

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PRE_2 is discounted to POST_1 to get the post money valuation at the time of the first round. F_1 , which is the first round investment as a percentage of POST_1 , is the required ownership for the first round funder (VC1). This amount will be diluted. The F_1 percentage is used to calculate the number of shares that VC1 requires to maintain their desired ownership fraction; the number of shares is denoted by VC1 # Shares. From this number, the price per share for VC1 is calculated.

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$$\text{VC1 \# Shares} = 1,000,000 \times 0.9522 / (1 - 0.9522) = 19,918,033$$

Per – share price paid in the first round is \$0.25 (\$5,000,000/19,918,033)

VC2 # Shares denotes the number of new shares required by VC2 to obtain their desired ownership percentage. Note **total shares for round one** must be taken into consideration. Finally, the price per share in the second round equals the second round investment divided by VC2 # Shares.

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Per – share price paid in the second round is \$0.56 (\$3,000,000/5,311,475)

\$0.11 uses the total number of shares in the denominator to determine the price per share in the second round, not just the VC2 # Shares. \$0.25 is the per share price in the first round.

Question 15

L2R41TB-AC010-1512

LOS: LOS-9170

Lesson Reference: Lesson 4: Private Equity Fund Structures, Due Diligence, and Valuation

Difficulty: medium

The terms defined by an LBO fund prospectus state a carried interest payout of 20 percent on exit for *each* investment that exceeds 9% IRR. Committed capital for the fund is \$80 million; the GP has invested \$30 million in company A and \$40 million in company B. A \$4 million profit representing IRR of 7.8% has been realized upon exit from company A in year 2 and the investment in company B has remained unchanged. In year 2, the GP will be entitled to a carried interest payout *closest to*:

- ☒ \$0
- ☐ \$468,000
- ☐ \$800,000

Rationale

✔ \$0

The GP will be entitled to no carried interest payout because the investment did not exceed the IRR hurdle rate for payout. Choice B incorrectly uses 7.8% IRR to calculate a base to take 20%. Choice C is the carried interest the GP would have been entitled to if the IRR exceeded the 9% hurdle rate.

Rationale

✘ \$468,000

The GP will be entitled to no carried interest payout because the investment did not exceed the IRR hurdle rate for payout. Choice B incorrectly uses 7.8% IRR to calculate a base to take 20%. Choice C is the carried interest the GP would have been entitled to if the IRR exceeded the 9% hurdle rate.

Rationale

✘ \$800,000

The GP will be entitled to no carried interest payout because the investment did not exceed the IRR hurdle rate for payout. Choice B incorrectly uses 7.8% IRR to calculate a base to take 20%. Choice C is the carried interest the GP would have been entitled to if the IRR exceeded the 9% hurdle rate.

Question 16

L2R41TB-AC014-1512

LOS: LOS-9170

Lesson Reference: Lesson 4: Private Equity Fund Structures, Due Diligence, and Valuation

Difficulty: medium

Private equity firms may require potential acquirers to make the same offer to minority shareholders as to majority interests in a program *most likely* known as:

- ☐ reserved matters.
- ☐ liquidation preference.
- ☒ tag-along, drag-along rights.

Rationale

reserved matters.

Private equity firms align their interests with portfolio firm managers by implementing exit-oriented packages such as tag-along, drag-along rights requiring future acquirers to extend the same offer to all shareholders (including management, which has likely received significant stock as incentives). Managers thereby benefit from increases in the firm's value.

Rationale

liquidation preference.

Private equity firms align their interests with portfolio firm managers by implementing exit-oriented packages such as tag-along, drag-along rights requiring future acquirers to extend the same offer to all shareholders (including management, which has likely received significant stock as incentives). Managers thereby benefit from increases in the firm's value.

Rationale

tag-along, drag-along rights.

Private equity firms align their interests with portfolio firm managers by implementing exit-oriented packages such as tag-along, drag-along rights requiring future acquirers to extend the same offer to all shareholders (including management, which has likely received significant stock as incentives). Managers thereby benefit from increases in the firm's value.

Question 17

L2R41TB-AC022-1512

LOS: LOS-9210

Lesson Reference: Lesson 6: Valuation of Venture Capital Deals

Difficulty: medium

Returns on private equity funds will *most likely* be reported based on:

- ☒ IRR.
- ☐ time-weighted return.
- ☐ average of time-weighted and money-weighted return.

Rationale

✓ IRR.

GIPS specify that private equity fund returns will be measured on a money-weighted basis (i.e., IRR). This is possible because returns from a private equity fund are generally paid out to investors rather than reinvested and the cost basis does not change as investors are added.

Rationale

✗ time-weighted return.

GIPS specify that private equity fund returns will be measured on a money-weighted basis (i.e., IRR). This is possible because returns from a private equity fund are generally paid out to investors rather than reinvested and the cost basis does not change as investors are added.

Rationale

✗ average of time-weighted and money-weighted return.

GIPS specify that private equity fund returns will be measured on a money-weighted basis (i.e., IRR). This is possible because returns from a private equity fund are generally paid out to investors rather than reinvested and the cost basis does not change as investors are added.

Question 18

L2R41TB-AC013-1512

LOS: LOS-9140

Lesson Reference: Lesson 2: Contrasting Valuation in Venture Capital and Buyout Settings

Difficulty: medium

Which of the following *most likely* relates to private equity rather than venture capital investments?

- ☐ Significant cash burn rate.
- ☐ Concerned with milestone achievement.
- ☒ Moderate returns from many investments versus few failures.

Rationale

Significant cash burn rate.

Private equity firms typically have several firms in a portfolio, but don't expect extraordinary returns from any one investment. This is unlike venture capital, in which investors have high expectations for investments, many losses, and a few outsized successes.

Rationale

Concerned with milestone achievement.

Private equity firms typically have several firms in a portfolio, but don't expect extraordinary returns from any one investment. This is unlike venture capital, in which investors have high expectations for investments, many losses, and a few outsized successes.

Rationale

Moderate returns from many investments versus few failures.

Private equity firms typically have several firms in a portfolio, but don't expect extraordinary returns from any one investment. This is unlike venture capital, in which investors have high expectations for investments, many losses, and a few outsized successes.

Question 19

L2R41TB-AC008-1512

LOS: LOS-9210

Lesson Reference: Lesson 6: Valuation of Venture Capital Deals

Difficulty: medium

A target firm and its VC funds provider agree on the following information:

Current # of shares in target	1,000,000
Amount of VC investment required	\$5,000,000
Terminal value at exit	\$50,000,000
Periods until exit	5
VC required return	50%

The number of shares the VCs will be issued is *closest* to:

- ☒ 3,155,844
- ☐ 4,155,844
- ☐ 6,587,362

Rationale

✓ **3,155,844**

The post-money valuation (POST) is the present value of the terminal value at exit:

$$\text{POST} = \frac{\text{TV}}{(1 + r)^t} = \frac{\$50,000,000}{(1 + 50\%)^5} = \$6,584,362$$

The proportionate VC share equals 75.9375% ($5,000,000 / \$6,584,362$). To maintain 75.9375% interest while giving the founders 1 million shares (x), the founders must receive y shares:

$$\begin{aligned}\% \text{VC share} &= \frac{y}{x+y} \\ 0.7594 &= \frac{y}{1,000,000 + y} \\ y &= \frac{759,375}{0.240625} = 3,155,844\end{aligned}$$

4,155,844 is the total number of shares. 6,587,362 is total dollar value of the post-money valuation.

Rationale

✗ **4,155,844**

The post-money valuation (POST) is the present value of the terminal value at exit:

$$\text{POST} = \frac{\text{TV}}{(1+r)^t} = \frac{\$50,000,000}{(1+50)^5} = \$6,584,362$$

The proportionate VC share equals 75.9375% ($I/\text{POST} = \$5,000,000/\$6,584,362$). To maintain 75.9375% interest while giving the founders 1 million shares (x), the founders must receive y shares:

$$\begin{aligned}\% \text{VC share} &= \frac{y}{x+y} \\ 0.7594 &= \frac{y}{1,000,000+y} \\ y &= \frac{759,375}{0.240625} = 3,155,844\end{aligned}$$

4,155,844 is the total number of shares. 6,587,362 is total dollar value of the post-money valuation.

Rationale

✖ 6,587,362

The post-money valuation (POST) is the present value of the terminal value at exit:

$$\text{POST} = \frac{\text{TV}}{(1+r)^t} = \frac{\$50,000,000}{(1+50)^5} = \$6,584,362$$

The proportionate VC share equals 75.9375% ($I/\text{POST} = \$5,000,000/\$6,584,362$). To maintain 75.9375% interest while giving the founders 1 million shares (x), the founders must receive y shares:

$$\begin{aligned}\% \text{VC share} &= \frac{y}{x+y} \\ 0.7594 &= \frac{y}{1,000,000+y} \\ y &= \frac{759,375}{0.240625} = 3,155,844\end{aligned}$$

4,155,844 is the total number of shares. 6,587,362 is total dollar value of the post-money valuation.

Question 20

L2R41TB-AC024-1512

LOS: LOS-9150

Lesson Reference: Lesson 3: Valuation Issues in Buyout and Venture Capital Transactions and Exit Routes

Difficulty: medium

An early-stage venture investment fund will *most likely* determine investment value for each portfolio firm's financial reporting based on:

- ☐ relative market value.
- ☐ intrinsic value.
- ☒ cost.

Rationale

✗ **relative market value.**

Early-stage companies often have no revenues or cash flows to value using an intrinsic value approach, and similar companies may be impossible to find. It is customary that early-stage firm values are reported at cost.

Rationale

✗ **intrinsic value.**

Early-stage companies often have no revenues or cash flows to value using an intrinsic value approach, and similar companies may be impossible to find. It is customary that early-stage firm values are reported at cost.

Rationale

✓ **cost.**

Early-stage companies often have no revenues or cash flows to value using an intrinsic value approach, and similar companies may be impossible to find. It is customary that early-stage firm values are reported at cost.

Question 21

L2AI-TB0012-1412

LOS: LOS-9150

Lesson Reference: Lesson 3: Valuation Issues in Buyout and Venture Capital Transactions and Exit Routes

Difficulty: medium

A private equity buyout investor has made the following forecasts for a potential LBO deal:

Initial enterprise value of company (€m)	1,000
Leverage of deal	3x
Management common equity (€m)	10
PE Firm common equity (€m)	40
8% rolled-up preference shares owned by PE Firm (€m)	200
Investment horizon (yrs)	6
Expected enterprise value return multiple	2
Expected outstanding principal of debt (€m)	500

Which of the following is the expected IRR return to the management of the firm?

- ☐ 32%.
- ☒ 69%.
- ☐ 100%.

Rationale

This Answer is Correct

The enterprise value of the company is expected to double; hence, the company will be worth €2,000 million in six years' time.

Removing the outstanding value of debt, the value of equity will be €2,000 million – €500 million = €1,500 million.

The preference shares will have rolled up to be worth €200 million $(1.08)^6 = €317$ million.

Hence, the common shares will be worth €1,500 million – €317 million = €1,183 million. Of these common shares, 20% are owned by management; hence, the expected value of management's common shares is $0.2 \times €1,183 = €237$ million.

Hence, the total gain to management is expected to be $(237 / 10)^{(1/6)} - 1 = 69\%$.

Question 22

L2AI-TB0009-1412

LOS: LOS-9120

Lesson Reference: Lesson 1: Introduction to Valuation Techniques in Private Equity Transactions

Difficulty: medium

“Term sheets” used in private equity investments are most likely designed to enhance which component of the private equity value creation process?

- ☐ Corporate restructuring.
- ☐ Financial engineering.
- ☒ Alignment of interests.

Rationale

This Answer is Correct

Term sheets set out the structuring of investment terms in order to result in a balance of rights and obligations between the private equity firm and the management team. This will help align interests between the management and the private equity investors and lower agency costs that are often experienced in public investments.

Question 23

L2R41TB-AC016-1512

LOS: LOS-9150

Lesson Reference: Lesson 3: Valuation Issues in Buyout and Venture Capital Transactions and Exit Routes

Difficulty: medium

Ronald Kyle advises a large Midwestern university's endowment. The board of this endowment wishes exposure (as a limited partner) to alternative asset classes such as private equity; Kyle has narrowed down potential investments to two funds with the following provisions:

	Fund X	Fund Y
Management fees	2.0%	1.5%
Transactions fees (GP-LP)	75–25%	50–50%
Carried interest	17.5%	22.5%
Hurdle rate	7.5%	10%
Clawback provision	No	Yes
Distribution waterfall	Deal-by-deal	Total return

Kyle will *most likely* recommend that the endowment board invest in:

- ☐ Fund X.
- ☒ Fund Y.
- ☐ neither fund.

Rationale

Fund X.

With the exception of higher carried interest, Fund Y provisions will provide better security for its limited partners. Even the carried interest may benefit Fund Y LPs, however, as carried interest benefits the GP when investments are successful. This higher carried interest is also protected by clawback provisions should subsequent investments fail to earn the hurdle return.

Rationale

Fund Y.

With the exception of higher carried interest, Fund Y provisions will provide better security for its limited partners. Even the carried interest may benefit Fund Y LPs, however, as carried interest benefits the GP when investments are successful. This higher carried interest is also protected by clawback provisions should subsequent investments fail to earn the hurdle return.

Rationale

✗ **neither fund.**

With the exception of higher carried interest, Fund Y provisions will provide better security for its limited partners. Even the carried interest may benefit Fund Y LPs, however, as carried interest benefits the GP when investments are successful. This higher carried interest is also protected by clawback provisions should subsequent investments fail to earn the hurdle return.

Question 24

L2AI-PQ4008-1410

LOS: LOS-9170

Lesson Reference: Lesson 4: Private Equity Fund Structures, Due Diligence, and Valuation

Difficulty: medium

Beta Equity Fund has committed capital of \$300 million. The GP is entitled to receive carried interest of 15%. The fund made the following three investments at the beginning 2012 and exited them at the end of 2012:

Portfolio Company Amount Invested Proceeds upon Exit

A	\$41 million	\$52 million
B	\$94 million	\$127 million
C	\$85 million	\$98 million

The amount of carried interest paid if it is based on the value of the investment portfolio exceeding committed capital (first alternative) and if it is based on the value of the investment portfolio exceeding the value of invested capital by 20% (second alternative) is *closest to*:

First Alternative Second Alternative

A	\$0	\$8.55 million
B	\$0	\$1.95 million
C	\$8.55 million	\$1.95 million

- ☒ Row A
☐ Row B
☐ Row C

Rationale

✓ **This Answer is Correct**

Total committed capital = \$300 million

Ending value of the portfolio = \$52 + \$127 + \$98 = \$277 million

Therefore, **no carried interest** will be paid under the first alternative.

Invested capital = \$41 + \$94 + \$85 = \$220 million

Carried interest will be paid if portfolio value exceeds \$264 million (= \$220m × 1.20).

Therefore, carried interest = (\$277m – \$220m) × 0.15 = **\$8.55 million**

Question 25

L2R41TB-AC017-1512

LOS: LOS-9130

Lesson Reference: Lesson 1: Introduction to Valuation Techniques in Private Equity Transactions

Difficulty: medium

Which aspect of leveraged buyouts will *most likely* prevent management from using cash flows to pursue or satisfy its own agenda?

- ☒ High debt levels.
- ☐ Lower weighted-average cost of capital.
- ☐ Significant monetary awards for a successful exit from an investment.

Rationale

☒ **High debt levels.**

High debt levels guarantee that management must use cash flow to pay debt service rather than using it for corporate jets and executive golf memberships.

Rationale

☐ **Lower weighted-average cost of capital.**

High debt levels guarantee that management must use cash flow to pay debt service rather than using it for corporate jets and executive golf memberships.

Rationale

☐ **Significant monetary awards for a successful exit from an investment.**

High debt levels guarantee that management must use cash flow to pay debt service rather than using it for corporate jets and executive golf memberships.

Question 26

L2R41TB-ITEMSET-AC001-1512

LOS: LOS-9160

LOS: LOS-9170

LOS: LOS-9210

Lesson Reference: Lesson 3: Valuation Issues in Buyout and Venture Capital Transactions and Exit Routes

Difficulty: medium

Use the following information to answer the next 3 questions:

Jan Pedersen, a partner with Forti Venture Partners, meets with Faldo Ramekin, CEO of biomed company PancreaPace, to discuss term sheet considerations for possible venture capital financing. PancreaPace has developed a new medication, Glucofāz, for moderating blood sugar and promoting whole body glucose homeostasis. Pedersen believes this medicine could be the next breakthrough treatment for insulin-dependent diabetics; he believes the company is a good investment for Forti.

PancreaPace currently has one million private shares among its directors and executive management team (the “founders”). During the meeting Ramekin acknowledges there may be other ways to access capital but since the company only has minimal licensing revenue, the founders prefer to obtain venture capital (VC) funding to pay for development and testing prototypes, as well as to continue the FDA approval process. Pedersen agrees and advises the VC route will also provide the founders with maximum flexibility to develop, test and market their product. For various reasons, Ramekin indicates to Pedersen that the founders prefer to keep the initial number of shares at one million.

When asked to provide a realistic estimate of success each year, Ramekin indicates 75 percent to be a good working probability. Pedersen explains this factor is important in estimating discounts rates used in Forti's valuation models. Pederson agrees this figure is reasonable given the strength of what he sees in the lab, and further agrees to the other terms identified in Exhibit 1.

Ramekin asks Pederson to further explain some of the terms related to the management team found in the term sheet. Ramekin asks the following questions:

1. What is the typical length of time Forti places restrictions on someone from the management team from setting up a competitive business?
2. For management team members who are minority shareholders, is there a mechanism that allows them to sell their shares alongside majority shareholders in the case of a future acquisition?
3. What performance targets can we agree on that would enable the management team to be rewarded with increased equity ownership as a result of meeting those targets?

In concluding the meeting, Pedersen asks Ramekin how he sees the company developing after the product has been approved. Ramekin responds, “We have the industry relationships to enter joint ventures or even be acquired by top-tier companies in our industry. These firms will be able to manufacture the medication more efficiently. We, the founders, however, plan to remain

involved and determine PancreaPace's future path; we want to reap the benefits of the company's success well into the future. We have an attractive pipeline of additional drugs in the works that will make your and our investment even more valuable once we succeed with Glucofāz.”

Exhibit 1: PancreaPace Analysis

Founder shares	1.0 million
VC investment	\$125.0 million
Terminal value at exit	\$1.5 billion
Periods until exit	5
Required return (successful)	15.0%
Failure risk (annual)	25.0%

i.

When Forti seeks to exit their investment in PancreaPace, which of the following exit options will *most likely* best meet both the VC and founders' requirements?

- ☒ Initial public offering.
- ☐ Management buyout.
- ☐ Secondary market offering.

Rationale

✔ This Answer is Correct

Although PancreaPace could be sold to another top-tier firm in the industry, the greatest gains on a successful product will likely result from issuing shares and licensing the proprietary drug formula. In that way, the smaller biomed firm reaps the synergy advantages of having the product produced and marketed by the larger firm as well as the ascribed value of products in the pipeline. An IPO also meets the need of the founders by keeping them involved. Often in a purchase by a competitor redundant positions are eliminated. A management buyout is unlikely as it would require significant debt and it is unlikely that the company will have built cash flow to sustain such debt.

Rationale

✔ This Answer is Correct

Although PancreaPace could be sold to another top-tier firm in the industry, the greatest gains on a successful product will likely result from issuing shares and licensing the proprietary drug formula. In that way, the smaller biomed firm reaps the synergy advantages of having the product produced and marketed by the larger firm as well as the ascribed value of products in the pipeline. An IPO also meets the need of the founders by keeping them involved. Often in a purchase by a competitor redundant positions are eliminated. A management buyout is unlikely as it would require significant debt and it is unlikely that the company will have built cash flow to sustain such debt.

Rationale

✔ This Answer is Correct

Although PancreaPace could be sold to another top-tier firm in the industry, the greatest gains on a successful product will likely result from issuing shares and licensing the proprietary drug formula. In that way, the smaller biomed firm reaps the synergy advantages of having the product produced and marketed by the larger firm as well as the ascribed value of products in the pipeline. An IPO also meets the need of the founders by keeping them involved. Often in a purchase by a competitor redundant positions are eliminated. A management buyout is unlikely as it would require significant debt and it is unlikely that the company will have built cash flow to sustain such debt.

ii.

Ramekin's question #2 relates to:

- ☐ a ratchet.
- ☒ tag-along rights.
- ☐ a clawback provision.

Rationale

✘ This Answer is Incorrect

Tag-along rights are contractual rights which protect minority shareholders; if a majority shareholder sells his/her stake, minority shareholders are offered to join the transaction. Question #3 refers to a ratchet. A clawback provision refers the return of profit by the general partner to the limited partners when it exceeds an agreed upon profit split.

Rationale

✘ This Answer is Incorrect

Tag-along rights are contractual rights which protect minority shareholders; if a majority shareholder sells his/her stake, minority shareholders are offered to join the transaction. Question #3 refers to a ratchet. A clawback provision refers the return of profit by the general partner to the limited partners when it exceeds an agreed upon profit split.

Rationale

✘ This Answer is Incorrect

Tag-along rights are contractual rights which protect minority shareholders; if a majority shareholder sells his/her stake, minority shareholders are offered to join the transaction. Question #3 refers to a ratchet. A clawback provision refers the return of profit by the general partner to the limited partners when it exceeds an agreed upon profit split.

iii.

Forti's ownership fraction after funding will be *closest to*:

- ☐ 44.8%.
- ☐ 57.4%.
- ☒ 70.5%.

Rationale

✗ This Answer is Incorrect

One method of determining the ownership fraction requires first determining the required return for success and failure (combined) of the portfolio firm:

$$r_{S+F} = \frac{r_s + P(F)}{1 - P(F)} = \frac{0.15 + 0.25}{1 - 0.25} = 0.533$$

This required return is used to discount the terminal value at exit to present value:

$$POST_0 = \frac{TV_t}{(1 + r_{S+F})^t} = \frac{\$1.5 \text{ billion}}{(1 + 0.533)^5} = \$177,166,043$$

The VC's investment compared to present value is the ownership fraction:

$$VC\% = \frac{I_0}{POST_0} = \frac{\$125,000,000}{\$177,166,043} = 0.705$$

Choice A incorrectly uses 40% as the discount rate (the sum of the risk of failure and the required rate of return of success). Choice B incorrectly subtracts the required rate of return of success in the denominator rather than the probability of failure in calculating the required rate of return.

Rationale

✗ This Answer is Incorrect

One method of determining the ownership fraction requires first determining the required return for success and failure (combined) of the portfolio firm:

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Rationale

✖ This Answer is Incorrect

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$$VC\% = \frac{I_0}{POST_0} = \frac{\$125,000,000}{\$177,166,043} = 0.705$$

Choice A incorrectly uses 40% as the discount rate (the sum of the risk of failure and the required rate of return of success). Choice B incorrectly subtracts the required rate of return of success in the denominator rather than the probability of failure in calculating the required rate of return.

Question 27

L2R41TB-AC015-1512

LOS: LOS-9130

Lesson Reference: Lesson 1: Introduction to Valuation Techniques in Private Equity Transactions

Difficulty: medium

Which of the following term sheet items would *most likely* apply to aligning portfolio company manager interests with equity provider interests in VC investments, but not in other private equity investments?

- ☒ Earn outs.
- ☐ Preferred dividends.
- ☐ Non-compete clause.

Rationale

✔ Earn outs.

Earn outs link the acquisition price paid to the owner to a multiple of the firm's performance over 2–3 years. The owner therefore has an incentive to meet performance milestones in order to maximize acquisition price. Preferred dividends apply primarily to non-VC private equity transactions and non-compete clauses may apply to either VC or other private equity transactions.

Rationale

✘ Preferred dividends.

Earn outs link the acquisition price paid to the owner to a multiple of the firm's performance over 2–3 years. The owner therefore has an incentive to meet performance milestones in order to maximize acquisition price. Preferred dividends apply primarily to non-VC private equity transactions and non-compete clauses may apply to either VC or other private equity transactions.

Rationale

✘ Non-compete clause.

Earn outs link the acquisition price paid to the owner to a multiple of the firm's performance over 2–3 years. The owner therefore has an incentive to meet performance milestones in order to maximize acquisition price. Preferred dividends apply primarily to non-VC private equity transactions and non-compete clauses may apply to either VC or other private equity transactions.

Question 28

L2R41TB-AC011-1512

LOS: LOS-9170

Lesson Reference: Lesson 4: Private Equity Fund Structures, Due Diligence, and Valuation

Difficulty: medium

The terms defined by an LBO fund prospectus state: a carried interest payout of 20 percent on a deal-by-deal investment, a zero hurdle rate and an annual clawback reconciliation. Committed capital for the fund is \$100 million; the GP has invested \$50 million in company A and \$40 million in company B. A \$10 million profit has been realized on exit from company A in year 2. The investment in company B has a loss of \$7 million in year 3. In year 3, the GP will be subject to a carried interest clawback *closest* to:

- ☐ \$0.6 million.
- ☒ \$1.4 million.
- ☐ \$2.0 million.

Rationale

 **\$0.6 million.**

The GP will be entitled to \$2 million ($0.20 \times \10 million) in year 2 carried interest from company A, but will have to repay \$1.4 million ($0.20 \times -\7 million) in year 3. The question states this is an annual reconciliation; if it were cumulative at three years, \$0.6 million would be correct.

Rationale

 **\$1.4 million.**

The GP will be entitled to \$2 million ($0.20 \times \10 million) in year 2 carried interest from company A, but will have to repay \$1.4 million ($0.20 \times -\7 million) in year 3. The question states this is an annual reconciliation; if it were cumulative at three years, \$0.6 would be correct.

Rationale

 **\$2.0 million.**

The GP will be entitled to \$2 million ($0.20 \times \10 million) in year 2 carried interest from company A, but will have to repay \$1.4 million ($0.20 \times -\7 million) in year 3. The question states this is an annual reconciliation; if it were cumulative at three years, \$0.6 would be correct.

Question 29

L2AI-PQ4020-1410

LOS: LOS-9150

Lesson Reference: Lesson 3: Valuation Issues in Buyout and Venture Capital Transactions and Exit Routes

Difficulty: medium

Which of the following valuation techniques will *most likely* be applied to value an early stage company?

- ☐ The income approach
- ☐ Relative valuation
- ☒ Replacement cost

Rationale

This Answer is Correct

The income approach and relative valuation are typically applied to companies with sufficient operating histories. Replacement cost is applied to early-stage companies that are in the development stage and are currently generating negative cash flow.

Question 30

L2R41TB-AC023-1512

LOS: LOS-9130

Lesson Reference: Lesson 1: Introduction to Valuation Techniques in Private Equity Transactions

Difficulty: medium

A management equity program which increases percentage ownership for managers of successful private equity portfolio investments would *most likely* be termed a:

- ☒ ratchet provision.
- ☐ profit sharing incentive.
- ☐ carried interest provision.

Rationale

☒ **ratchet provision.**

This is an incentive for managers to meet performance objectives and deliver successful portfolio companies.

Rationale

☐ **profit sharing incentive.**

This is an incentive for managers to meet performance objectives and deliver successful portfolio companies.

Rationale

☐ **carried interest provision.**

This is an incentive for managers to meet performance objectives and deliver successful portfolio companies.

Question 31

L2AI-TB0008-1412

LOS: LOS-9060

Lesson Reference: Lesson 1: Introduction to Valuation Techniques in Private Equity Transactions

Difficulty: medium

Which of the following economic drivers is the most important when considering the factors affecting storage REITs?

- ☒ National GDP growth.
- ☐ New space supply versus demand.
- ☐ Population growth.

Rationale

This Answer is Correct

National GDP growth is the primary economic driver for all different types of REITs. Answer B is incorrect since supply versus demand relates to the underlying properties rather than for storage itself. Answer C is incorrect since population growth, while important for the demand for storage, is not as important as national GDP growth.

Question 32

L2AI-TB0011-1412

LOS: LOS-9150

Lesson Reference: Lesson 3: Valuation Issues in Buyout and Venture Capital Transactions and Exit Routes

Difficulty: medium

A private equity buyout investor has made the following forecasts for a potential LBO deal:

Initial enterprise value of company (€m)	1,000
Leverage of deal	3x
Management common equity (€m)	10
PE firm common equity (€m)	40
8% rolled-up preference shares owned by PE firm (€m)	200
Investment horizon (yrs)	6
Expected enterprise value return multiple	2
Expected outstanding principal of debt (€m)	500

Which of the following is the expected IRR return to the PE firm?

- ☒ 32%.
- ☐ 69%.
- ☐ 100%.

Rationale

This Answer is Correct

The enterprise value of the company is expected to double, hence the company will be worth €2,000 million in six years' time.

Removing the outstanding value of debt, the value of equity will be €2,000 million – €500 million = €1,500 million.

The preference shares will have rolled up to be worth €200 million $(1.08)^6 = €317$ million.

Hence, the common shares will be worth €1,500 million – €317 million = €1,183 million. Of these common shares, 80% are owned by the PE firm; hence, the expected value of the PE firm's common shares is $0.8 \times €1,183 = €946$ million.

Hence, the total gain to the PE firm is expected to be $((946 + 317) / (40 + 200))^{(1/6)} - 1 = 32\%$.

Question 33

L2AI-PQ4009-1410

LOS: LOS-9190

Lesson Reference: Lesson 5: Risks and Costs of Investing in Private Equity and Evaluating Fund Performance

Difficulty: medium

An analyst gathered the following information regarding two private equity funds:

Fund	Gross IRR	Net IRR	DPI	TVPI
A	3.2%	-0.4%	0.35	1.85
B	11.5%	9.3%	1.28	2.48

Which of the following statements is *least accurate*?

- ☐ Fund A is still experiencing the J-curve effect.
- ☒ Fund B has a higher unrealized return on investment.
- ☐ Fund A has returned \$0.35 to LPs for every \$1 of capital invested.

Rationale

This Answer is Correct

Fund B has an RVPI of \$1.20 (\$2.48 – \$1.28), which is lower than the RVPI of Fund A of \$1.50 (\$1.85 – \$0.35).

Question 34

L2R41TB-ITEMSET-AC004-1512

LOS: LOS-9170

LOS: LOS-9190

LOS: LOS-9200

Lesson Reference: Lesson 4: Private Equity Fund Structures, Due Diligence, and Valuation

Difficulty: N/A

Use the following information to answer the next 3 questions:

Juanita Rodriguez, an investment analyst at a large institutional investor, is asked to recommend a private equity fund for the institution. Edmund Plimpton, one of the directors and a member of the investment policy committee (IPC), has outside relationships with executives at Daedalus Partners and asks Rodriguez to review Labyrinth limited partnerships (DPLLP_x) for consideration as an institutional investment.

Rodriguez receives detailed information for each of the LPs and wishes to determine whether the funds' reported information justifies entering the due diligence phase. All the Daedalus LPs have a 2% management fee with 20 percent carried interest from the first month that pre-distribution NAV exceeds committed capital. All the funds have 6-year terms, with some flexibility should the market be poor when the funds terminate. Rodriguez determines that a 10% required return should be sufficient for this type of equity investment.

At a meeting later with the IPC, Plimpton assures the board he has made a thorough inquiry to the calculation of various measures and how they should be analyzed. "For example," he begins, and makes the following statements:

Statement 1: We use the net cash flow internal rate of return as the basis for determining hurdle rates to make carried interest payouts because it describes the return to the Limited Partners rather than the asset manager.

Statement 2: Carried interest is calculated based on the change in post-distribution NAV over the period.

Statement 3: What we should really look at for an indication of cash-on-cash return is the RVPI measure.

Exhibit 1: DPLLP1 Cash Flows and Distributions

Year	Called Down	Paid-in Capital	Mgmt Fees	Operating Results	Pre-distrib. NAV	CF Gross	Carried Interest	CF Net	Post-distrib. Distrib.	NAV
20X0						-85.0	0.0	-85.0	0.0	
20X1	85	85	1.7	-20	63.3	-85.0	0.0	-86.7	0.0	63.3
20X2	65	150	3.0	-30	95.3	-65.0	0.0	-68.0	0.0	95.3
20X3	35	185	3.7	45	171.6	20.0	0.0	16.3	0.0	171.6
20X4	25	210	4.2	100	292.4	85.0	13.5	67.3	41.9	237.0
20X5	15	225	4.5	125	372.5	125.0	16.0	104.5	98.9	257.6

	Called	Paid-in	Mgmt	Operating	Pre-distrib.	CF	Carried	CF		Post-distrib.
Year	Down	Capital	Fees	Results	NAV	Gross	Interest	Net	Distrib.	NAV
20X6	0	225	4.5	200	453.1	200.0	16.1	179.4	178.5	258.5
						IRR 15.3%		10.5%		

Note: DPLLP1 has committed capital of \$225 million.

i.

Which of Plimpton's statements is *correct*?

- ☒ Statement 1.
- ☐ Statement 2.
- ☐ Statement 3.

Rationale

☒ This Answer is Correct

Statement 1 is correct. IRR based on net cash flows provide a more accurate return on what actually goes to the limited partners because it subtracts management fees and distribution of carried interest. Often there is a specified hurdle rate that must be met before carried interest can be paid out.

Prior operating results

Less: Called-down capital

Gross cash flow (return to fund)

Less: Management fees and carried interest

Net cash flow (return to LPs)

Statement 2 is incorrect; carried interest is calculated on pre-distribution NAV. Statement 3 is incorrect; DPI is the measure that is most closely associated with a “cash-on-cash” return.

Rationale

☒ This Answer is Correct

Statement 1 is correct. IRR based on net cash flows provide a more accurate return on what actually goes to the limited partners because it subtracts management fees and distribution of carried interest. Often there is a specified hurdle rate that must be met before carried interest can be paid out.

Prior operating results

Less: Called-down capital

Gross cash flow (return to fund)

Less: Management fees and carried interest

Net cash flow (return to LPs)

Statement 2 is incorrect; carried interest is calculated on pre-distribution NAV. Statement 3 is incorrect; DPI is the measure that is most closely associated with a “cash-on-cash” return.

Rationale

✔ **This Answer is Correct**

Statement 1 is correct. IRR based on net cash flows provide a more accurate return on what actually goes to the limited partners because it subtracts management fees and distribution of carried interest. Often there is a specified hurdle rate that must be met before carried interest can be paid out.

Prior operating results

Less: Called-down capital

Gross cash flow (return to fund)

Less: Management fees and carried interest

Net cash flow (return to LPs)

Statement 2 is incorrect; carried interest is calculated on pre-distribution NAV. Statement 3 is incorrect; DPI is the measure that is most closely associated with a “cash-on-cash” return.

ii.

Which statement *best* describes whether this investment meets Rodriguez's IRR requirement?

- ☐ Yes, because the time-weighted net IRR of 10.5% is higher than the IRR requirement.
- ☒ Yes, because the most relevant IRR measure for investors meets the requirement.
- ☐ No, because the IRR requirement is below the IRR based on gross cash flow.

Rationale

✘ **This Answer is Incorrect**

Rodriguez states that a 10% return is required for this investment. The 10.5% net cash flow IRR exceeds this requirement; the net cash flow IRR is the most relevant IRR measure for investors as it is net of fees and carried interest. Choice A is incorrect because net IRR for private equity investments are cash-flow-weighted not time-weighted as most other asset

classes are. Choice C is incorrect because net IRR is the more appropriate measure not gross IRR.

Rationale

✗ This Answer is Incorrect

Rodriguez states that a 10% return is required for this investment. The 10.5% net cash flow IRR exceeds this requirement; the net cash flow IRR is the most relevant IRR measure for investors as it is net of fees and carried interest. Choice A is incorrect because net IRR for private equity investments are cash-flow-weighted not time-weighted as most other asset classes are. Choice C is incorrect because net IRR is the more appropriate measure not gross IRR.

Rationale

✗ This Answer is Incorrect

Rodriguez states that a 10% return is required for this investment. The 10.5% net cash flow IRR exceeds this requirement; the net cash flow IRR is the most relevant IRR measure for investors as it is net of fees and carried interest. Choice A is incorrect because net IRR for private equity investments are cash-flow-weighted not time-weighted as most other asset classes are. Choice C is incorrect because net IRR is the more appropriate measure not gross IRR.

iii.

The 20X6 distributed-to-paid in (DPI) for DPLLP1 is *closest to*:

- ☐ 1.15x
- ☒ 1.42x
- ☐ 2.57x

Rationale

✗ This Answer is Incorrect

DPI is the cumulative distribution divided by paid-in capital (cumulative called down) and the calculation is as follows:

$$\text{DPI} = \frac{41.9 + 98.9 + 178.5}{225} = 1.42$$

Choice A is RVPI, the residual value to paid in capital, calculated as 20X6 post NAV divided cumulative called down capital ($258.5/225 = 1.15x$). Choice C is TVPI which is DPI plus RVPI.

Rationale

✖ This Answer is Incorrect

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Rationale

✖ This Answer is Incorrect

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$$\text{DPI} = \frac{41.9 + 98.9 + 178.5}{225} = 1.42$$

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Question 35

L2AI-PQ4018-1410

LOS: LOS-9220

Lesson Reference: Lesson 6: Valuation of Venture Capital Deals

Difficulty: medium

A venture capital firm is considering investing in a private company. The discount rate after accounting for systematic risk is 40%. However, the venture capital firm believes that the founders of the private company are too optimistic and that the chance of the company failing in any given year is 30%. The appropriate discount rate that the venture capital firm should use is *closest to*:

- ☐ 7.69%
- ☒ 100%
- ☐ 85.71%

Rationale

✔ This Answer is Correct

Adjusted discount rate = $[(1 + r) / (1 - q)] - 1$

Adjusted discount rate = $[(1 + 0.4) / (1 - 0.3)] - 1 = 100\%$

Question 36

L2AI-TBX104-1502

LOS: LOS-9210

Lesson Reference: Lesson 6: Valuation of Venture Capital Deals

Difficulty: easy

A venture capitalist has collected the following data regarding a potential VC deal:

Terminal value at exit	\$50 million
Time to exit	5 years
Required return	30%
Investment amount	\$5 million
Existing shares held by founders	1 million

The fair price of a share in the VC deal is closest to:

- ☐ \$5.00.
- ☒ \$8.48.
- ☐ \$10.00.

Rationale

✓ **This Answer is Correct**

Postdeal, the company will be worth $\$50 \text{ million} / 1.30^5 = \13.466 million .

Hence, the ownership share of the VC firm will be $\$5 \text{ million} / \$13.466\text{m} = 37.1\%$

Therefore, the founders must own 62.9% of shares with their holding of 1 million shares. This means that the total number of shares postdeal must be $1 \text{ million} / 0.629 = 1.59 \text{ million}$ shares, and the VC firm must be buying 589,825 shares. This implies a deal price of $\$5 \text{ million} / 589,825 = \8.477 .

Question 37

L200-PQ0045-1412

LOS: LOS-9140

Lesson Reference: Lesson 2: Contrasting Valuation in Venture Capital and Buyout Settings

Difficulty: medium

Which of the following companies would not likely interest a buyout investor?

- ☒ A new technology firm
- ☐ A railroad
- ☐ An established technology firm

Rationale

This Answer is Correct

Buyout investors are generally not looking to bear the risk of a new product line and instead prefer companies with more established cash flow.

Question 38

L2R41TB-AC020-1512

LOS: LOS-9170

Lesson Reference: Lesson 4: Private Equity Fund Structures, Due Diligence, and Valuation

Difficulty: medium

The features, investments, and results of a small private equity fund are shown below:

Committed private equity capital	\$125,000,000
Carried interest	20%
Hurdle rate	8%
Basis	deal-by-deal
Clawback	annual reconciliation

	Investment	Proceeds	Hurdle Rate
Investment A	\$2,450,000	\$5,750,000	achieved
Investment B	\$4,000,000	\$4,200,000	did not achieve
Investment C	\$7,450,000	\$12,000,000	achieved

Based on the terms of this fund, the general partner (GP) will receive a carried interest *closest to*:

- ☒ \$1,570,000
- ☐ \$1,610,000
- ☐ \$3,550,000

Rationale

✓ \$1,570,000

Extending the table data and making a few calculations shows the GP's 20% carried interest. If the investment did not meet the hurdle rate, the GP does not receive 20% of the gain (as was added in the second choice). The third choice incorrectly took 20% of the total proceeds of investment A and C, not the gains.

	Investment	Proceeds	Gain/(Loss)	GP Share
Investment A	\$2,450,000	\$5,750,000	\$3,300,000	\$660,000
Investment B	\$4,000,000	\$4,200,000	\$200,000	0
Investment C	\$7,450,000	\$12,000,000	\$4,550,000	<u>\$910,000</u>
Total				\$1,570,000

Rationale

✗ \$1,610,000

Extending the table data and making a few calculations shows the GP's 20% carried interest. If the investment did not meet the hurdle rate, the GP does not receive 20% of the

gain (as was added in the second choice). The third choice incorrectly took 20% of the total proceeds of investment A and C, not the gains.

	Investment	Proceeds	Gain/(Loss)	GP Share
Investment A	\$2,450,000	\$5,750,000	\$3,300,000	\$660,000
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Investment C	\$7,450,000	\$12,000,000	\$4,550,000	<u>\$910,000</u>
Total				\$1,570,000

Rationale

✘ **\$3,550,000**

Extending the table data and making a few calculations shows the GP's 20% carried interest. If the investment did not meet the hurdle rate, the GP does not receive 20% of the gain (as was added in the second choice). The third choice incorrectly took 20% of the total proceeds of investment A and C, not the gains.

	Investment	Proceeds	Gain/(Loss)	GP Share
Investment A	\$2,450,000	\$5,750,000	\$3,300,000	\$660,000
Investment B	\$4,000,000	\$4,200,000	\$200,000	0
Investment C	\$7,450,000	\$12,000,000	\$4,550,000	<u>\$910,000</u>
Total				\$1,570,000

Question 39

L2R41TB-AC021-1512

LOS: LOS-9190

Lesson Reference: Lesson 5: Risks and Costs of Investing in Private Equity and Evaluating Fund Performance

Difficulty: medium

Yuichi Watanabe analyzes private equity funds for potential inclusion in a retirement fund. While he is concerned about management's track record, he is more concerned about potential returns to limited partners.

PIC DVPI RVPI

Fund X 0.45 0.25 0.65

Fund Y 0.45 0.25 1.25

Fund Z 0.85 0.25 1.25

Which fund will *most likely* provide the greatest return over time if the pension fund purchases an existing limited partner's shares in the open market?

- ☐ Fund X.
- ☒ Fund Y.
- ☐ Fund Z.

Rationale

Fund X.

Funds Y and Z have the greatest residual value on paid in capital (RVPI), which is much like an undistributed capital gain. All three funds have the same DPI, a measure of cash-on-cash return similar to a dividend yield. Therefore, considering only Funds Y and Z, Fund Y is most likely the best choice because it has the lowest paid-in-to-committed capital ratio. Fund Y will receive more capital coming in over time than Fund Z and the pension fund will likely receive a longer stream of higher capital gains.

Rationale

Fund Y.

Funds Y and Z have the greatest residual value on paid in capital (RVPI), which is much like an undistributed capital gain. All three funds have the same DPI, a measure of cash-on-cash return similar to a dividend yield. Therefore, considering only Funds Y and Z, Fund Y is most likely the best choice because it has the lowest paid-in-to-committed capital ratio. Fund Y will receive more capital coming in over time than Fund Z and the pension fund will likely receive a longer stream of higher capital gains.

Rationale

❌ Fund Z.

Funds Y and Z have the greatest residual value on paid in capital (RVPI), which is much like an undistributed capital gain. All three funds have the same DPI, a measure of cash-on-cash return similar to a dividend yield. Therefore, considering only Funds Y and Z, Fund Y is most likely the best choice because it has the lowest paid-in-to-committed capital ratio. Fund Y will receive more capital coming in over time than Fund Z and the pension fund will likely receive a longer stream of higher capital gains.