Question 1
L2R35TB-AC041-1512
LOS: LOS-8480
Lesson Reference: Lesson 3: Free Cash Flow Model Variations
Difficulty: medium
American Home Appliances (AHA) has a current share price of $55 per share at the last close. AHA has two million common shares outstanding. Based on firm valuation of $140 million using a FCFF model, debt of $40 million, unsheltered interest of $2.4 million and non-operating assets of $10 million, an analyst would *most likely* conclude that AHA is:

- overvalued.
- undervalued.
- fairly valued.

Rationale
overvalued.

The analyst would first subtract debt from the total value and then add the value of non-operating assets:

$$V_{CE} = V_F - d + \text{Non-operating assets} = \$140 - 40 + 10 = \$110 \text{ million}$$

Then the price of each share can be determined by dividing common equity value into the number of common shares outstanding:

$$P_c = \frac{V_{CE}}{\text{CSO}} = \frac{\$110 \text{ million}}{2 \text{ million}} = \$55 \text{ per share}$$

The fair value price of $55 equals the market price, so AHA shares are fairly valued.

Rationale
undervalued.

The analyst would first subtract debt from the total value and then add the value of non-operating assets:

$$V_{CE} = V_F - d + \text{Non-operating assets} = \$140 - 40 + 10 = \$110 \text{ million}$$

Then the price of each share can be determined by dividing common equity value into the number of common shares outstanding:

$$P_c = \frac{V_{CE}}{\text{CSO}} = \frac{\$110 \text{ million}}{2 \text{ million}} = \$55 \text{ per share}$$

The fair value price of $55 equals the market price, so AHA shares are fairly valued.

Rationale

fairly valued.

The analyst would first subtract debt from the total value and then add the value of non-operating assets:

$$V_{CE} = V_F - d + \text{Non-operating assets} = \$140 - 40 + 10 = \$110 \text{ million}$$

Then the price of each share can be determined by dividing common equity value into the number of common shares outstanding:

$$P_c = \frac{V_{CE}}{\text{CSO}} = \frac{\$110 \text{ million}}{2 \text{ million}} = \$55 \text{ per share}$$

The fair value price of $55 equals the market price, so AHA shares are fairly valued.

Question 2
L2EQ-TB0022-1412
LOS: LOS-8370
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium
A “control” perspective is taken when performing:

- ○ FCFE valuation only.
- ○ FCFF valuation only.
- ◉ Both FCFE and FCFF valuations.

Rationale

This Answer is Correct

Both the FCFF and FCFE valuation methods take a control perspective where the investor is assuming they have discretion over the use of free cash flow.

Question 3
L2EQ-TB0023-1412
LOS: LOS-8380
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium
Posttax interest is usually added back to net income when calculating:

- ○ FCFE only.
- ◉ FCFF only.
- ○ Both FCFE and FCFF.

Rationale

This Answer is Correct

When starting from net income, posttax interest is added back when calculating FCFF only since the company must have generated this cash to pay the posttax interest cost to the providers of bond finance during the period.

Question 4
L2EQ-PQ3403-1411
LOS: LOS-8380
LOS: LOS-8390
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium

An analyst gathered the following information regarding Tetris Corporation:

Net income = $650,000

Interest expense = $21,250

Depreciation expense = $32,500

Impairment of goodwill = $24,280

Amortization of long-term bond discounts = $6,255

Capital expenditures = $250,670

Proceeds from sale of long-term assets = $82,500

Working capital investment = $71,300

Given a tax rate of 35%, free cash flow to the firm is *closest to*:

- (●) $487,378
- ( ) $404,878
- ( ) $475,868

Rationale
This Answer is Correct

FCFF = NI + NCC + Int (1 − Tax rate) − FCInv − WCInv

Fixed capital expenditure = 250,670 − 82,500 = $168,170

FCFF = 650,000 + (32,500 + 24,280 + 6,255) + [21,250 × (1 − 0.35)] − 168,170 − 71,300

FCFF = $487,377.5

Question 5
L2R35TB-AC021-1512
LOS: LOS-8460
Lesson Reference: Lesson 3: Free Cash Flow Model Variations
Difficulty: medium

Ameliana's FCFE for the current period is 8.75 million LCU (local currency units). Input values that contribute to low, base case, and high FCFE valuation are:

	Low Valuation	Base Case Valuation	High Valuation
FCFE growth	0.04	0.05	0.06
Risk-free rate	0.05	0.04	0.03
Market return	0.12	0.10	0.09
Beta	1.10	1.00	0.90

The difference between the high and low valuations for FCFE will be *closest* to:

- 107 million LCU.
- 264 million LCU.
- 282 million LCU.

Rationale
107 million LCU.

First it will be necessary to calculate rCE for the low and high valuation cases:

$$\begin{aligned} r_{CE} &= r_f + \beta(r_m - r_f) \\ r_{CE}^{LOW} &= 0.05 + 1010(0.12 - 0.05) = 0.127 \\ r_{CE}^{High} &= 0.03 + 0.90(0.09 - 0.03) = 0.084 \end{aligned}$$

Next, the low and high valuations are:

$$\begin{aligned} V_{CE} &= \frac{\text{FCFE}_n}{r_{CE} - g} = \frac{\text{FCFE}_t(1+g)^{n-t}}{r_{CE} - g} \\ V_{CE}^{Low} &= \frac{8.75 \text{ million } (1+0.04)}{0.127 - 0.04} = 101.60 \text{ million} \\ V_{CE}^{High} &= \frac{8.75 \text{ million } (1+0.06)}{0.084 - 0.06} = 386.46 \text{ million} \end{aligned}$$

The difference between low and high valuations is 281.86 million (386.46 – 104.60) LCU.

Rationale
264 million LCU.

First it will be necessary to calculate rCE for the low and high valuation cases:

$$\begin{aligned} r_{CE} &= r_f + \beta(r_m - r_f) \\ r_{CE}^{LOW} &= 0.05 + 1010(0.12 - 0.05) = 0.127 \\ r_{CE}^{High} &= 0.03 + 0.90(0.09 - 0.03) = 0.084 \end{aligned}$$

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The difference between low and high valuations is 281.86 million (386.46 – 104.60) LCU.

Rationale

282 million LCU.

First it will be necessary to calculate rCE for the low and high valuation cases:

$$\begin{aligned} r_{CE} &= r_f + \beta(r_m - r_f) \\ r_{CE}^{LOW} &= 0.05 + 1010(0.12 - 0.05) = 0.127 \\ r_{CE}^{High} &= 0.03 + 0.90(0.09 - 0.03) = 0.084 \end{aligned}$$

Next, the low and high valuations are:

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The difference between low and high valuations is 281.86 million (386.46 – 104.60) LCU.

Question 6
L2EQ-PQ3404-1411
LOS: LOS-8380
LOS: LOS-8390
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium

Selected information regarding Sakura Ltd is given below:

EBITDA = $1,550,950

Interest expense = $375,200

Fixed capital expenditures = $985,185

Depreciation expense = $350,400

Working capital investment = $220,650

Net borrowing = $195,280

Given a tax rate of 35%, free cash flow available to holders of common equity is *closest to*:

- $120,203
- -$123,680
- $419,155

Rationale

This Answer is Correct

FCFE = EBITDA (1 − Tax rate) − Interest (1 − Tax rate) + Depreciation (Tax rate) − FCInv − WCInv + Net borrowing

FCFE = [1,550,950 (1 − 0.35)] − [375,200 × (1 − 0.35)] + (350,400 × 0.35) − 985,185 − 220,650 + 195,280

FCFE = −$123,677.5

Question 7
L2R35TB-ITEMSET-AC001-1512
LOS: LOS-8400
LOS: LOS-8380
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: N/A

Use the following information to answer the next 3 questions:

Byomkesh Kapoor is calculating the total firm value and common equity value for Indian Oil Corporation. He has assembled selected earnings data in Table 1 and balance sheet data relevant to free cash flow forecasts in Table 2. In addition, Kapoor has determined that the marginal corporate income tax rate was 10 percent during the last two periods.

Table 1 Indian Oil Corporation Selected Income Statement Data (INR)

	2013	2012
Depreciation	5,201	4,868
Operating EBIT	8,542	13,854
Interest expense	6,409	5,591

Table 2 Indian Oil Corporation Selected Balance Sheet Data (INR)

	2013	2012
Net property, plant and equipment	78,906	73,535
Long-term borrowings	21,414	16,287
Current assets (excl cash)	127,795	120,494
Current liabilities	124,134	119,826

i.
Kapoor's calculation for India Oil's 2013 working capital investment will be *closest to*:

- (•) 2,990 INR.
- ( ) 7,290 INR.
- ( ) 11,610 INR.

Rationale

This Answer is Correct

Working capital investment equals the change in current assets less the change in current liabilities:

	2013	2012	Chg
Current assets (excl cash)	127,795	120,494	7,301
Current liabilities	124,134	119,826	4,308
ΔCA – ΔCL			2,993

Rationale

This Answer is Correct

Working capital investment equals the change in current assets less the change in current liabilities:

	2013	2012	Chg
Current assets (excl cash)	127,795	120,494	7,301
Current liabilities	124,134	119,826	4,308
ΔCA – ΔCL			2,993

Rationale

This Answer is Correct

Working capital investment equals the change in current assets less the change in current liabilities:

	2013	2012	Chg
Current assets (excl cash)	127,795	120,494	7,301
Current liabilities	124,134	119,826	4,308
ΔCA – ΔCL			2,993

ii.

Assuming no asset sales during the period, which of the following aspects of the Table 1 data would create the *greatest* difficulty for an analyst forecasting FCFE?

- Non-operating non-cash charges present in calculated net income.
- Lack of accumulated depreciation information to calculate fixed capital investment.
- Operating EBIT declined although working capital and new fixed capital investment increased.

Rationale

This Answer is Incorrect

Usually, an increase in WCI and FCI would accompany a sales increase, which in fact is what occurred during 2013. However, falling EBIT during a period when WCI and FCI increased would tend to indicate unstable EBIT margins. Even with the best sales forecast, it will be difficult to forecast India Oil's EBIT if the margin has been unstable.

Rationale

This Answer is Incorrect

Usually, an increase in WCI and FCI would accompany a sales increase, which in fact is what occurred during 2013. However, falling EBIT during a period when WCI and FCI increased

would tend to indicate unstable EBIT margins. Even with the best sales forecast, it will be difficult to forecast India Oil's EBIT if the margin has been unstable.

Rationale

This Answer is Incorrect

Usually, an increase in WCI and FCI would accompany a sales increase, which in fact is what occurred during 2013. However, falling EBIT during a period when WCI and FCI increased would tend to indicate unstable EBIT margins. Even with the best sales forecast, it will be difficult to forecast India Oil's EBIT if the margin has been unstable.

iii.

Which of the following adjustments will Kapoor make to free cash flows to the firm (FCFF) in order to calculate free cash flows to equity (FCFE)?

- Subtract 5,127 INR related to new borrowing.
- Subtract 5,768 INR related to unshielded interest expense.
- Add a net amount of 641.1 INR related to unshielded interest and new borrowings.

Rationale

This Answer is Incorrect

Assuming Kapoor has correctly calculated FCFF, his only adjustments will be to subtract unshielded interest expense and add net borrowing:

$$\begin{aligned} \text{FCFE} &= \text{FCFF} - \text{I}(1-t) + \Delta\text{d} \\ &= \text{FCFF} - 6{,}409\,(1-0.10) + (21{,}414 - 16{,}287) \\ &= \text{FCFF} - 5{,}768 + 5{,}127 \\ &= \text{FCFF} - 641 \end{aligned}$$

Rationale

This Answer is Incorrect

Assuming Kapoor has correctly calculated FCFF, his only adjustments will be to subtract unshielded interest expense and add net borrowing:

$$\begin{aligned} \text{FCFE} &= \text{FCFF} - \text{I}(1-t) + \Delta\text{d} \\ &= \text{FCFF} - 6{,}409\,(1-0.10) + (21{,}414 - 16{,}287) \\ &= \text{FCFF} - 5{,}768 + 5{,}127 \\ &= \text{FCFF} - 641 \end{aligned}$$

Rationale

This Answer is Incorrect

Assuming Kapoor has correctly calculated FCFF, his only adjustments will be to subtract unshielded interest expense and add net borrowing:

$$\begin{aligned}
\text{FCFE} &= \text{FCFF} - \text{I}\,(1-t) + \Delta\text{d} \\
&= \text{FCFF} - 6{,}409\,(1-0.10) + (21{,}414 - 16{,}287) \\
&= \text{FCFF} - 5{,}768 + 5{,}127 \\
&= \text{FCFF} - 641
\end{aligned}$$

Question 8
L2R35TB-AC011-1512
LOS: LOS-8420
Lesson Reference: Lesson 2: Forecasting Free Cash Flow
Difficulty: medium
A firm has dividend-paying preferred shares in its capital structure. An analyst calculating the firm's free cash flow to equity (FCFE) from net income available to common shareholders will *most likely*:

- ○ increase net income for the preferred dividend.
- ○ decrease net income for the preferred dividend.
- ◉ not adjust net income for the preferred dividend.

Rationale
✗ **increase net income for the preferred dividend.**
Preferred dividends are subtracted from net income to arrive at net income available to common shareholders (NIC). Therefore, the preferred dividend should be added back to NIC to get the starting point in the FCFF calculation. However, this adjustment is not needed for calculating FCFE.

Rationale
✗ **decrease net income for the preferred dividend.**
Preferred dividends are subtracted from net income to arrive at net income available to common shareholders (NIC). Therefore, the preferred dividend should be added back to NIC to get the starting point in the FCFF calculation. However, this adjustment is not needed for calculating FCFE.

Rationale
✓ **not adjust net income for the preferred dividend.**
Preferred dividends are subtracted from net income to arrive at net income available to common shareholders (NIC). Therefore, the preferred dividend should be added back to NIC to get the starting point in the FCFF calculation. However, this adjustment is not needed for calculating FCFE.

Question 9
L2EQ-TBX111-1502
LOS: LOS-8480
Lesson Reference: Lesson 3: Free Cash Flow Model Variations
Difficulty: easy

An analyst collects the following information regarding a company:

Current FCFF	$547 million
Outstanding shares	409.23 million
Equity beta	1.1
Risk-free rate	2%
Equity risk premium	5.50%
Cost of debt	3.50%
Tax rate	35%
Market value of debt	$5,290 million
Weight of debt in capital structure	15%
Growth of FCFF	4%

If the current share price is $30.79, using a single-stage FCFF model the analyst should conclude that the shares are:

- Undervalued.
- Fairly valued.
- Overvalued.

Rationale

This Answer is Correct

The cost of equity of the company will be, using the CAPM:

Risk-free rate + (beta × equity risk premium) = 2% + (1.1. x 5.5%) = 8.05%

Hence, the WACC of the company will be:

(0.15 × 3.5% × (1 – 0.35)) + (0.85 × 8.05%) = 7.18%

Then the next period's FCFF will be $547 million × 1.04 = $568.88, and using the single-stage Gordon growth model for FCFF, the value of the firm will be given by $568.88 / (0.0718 – 0.04) = $17,889 million.

Hence, the value of equity = $17,889 million – $5,290 million = $12,599 million, giving a fair value per share of 12,599 / 409.23 = $30.79.

Hence, the shares are fairly valued.

Question 10
L2R35TB-AC032-1512
LOS: LOS-8420
Lesson Reference: Lesson 2: Forecasting Free Cash Flow
Difficulty: medium
Alpha Company has issued new debt at the beginning of the current period. During that period, free cash flow to:

- (●) equity (FCFE) will increase by the borrowed amount.
- ( ) equity (FCFE) will decrease by the borrowed amount.
- ( ) the firm (FCFF) will decrease by the borrowed amount.

Rationale
✔ **equity (FCFE) will increase by the borrowed amount.**
FCFE includes changes in debt; the firm could issue debt and then distribute the proceeds to shareholders as a dividend (although this may not be considered best practice). Therefore, the new borrowing will increase FCFE by the borrowed amount during the period. Free cash flow to the firm's capital providers remains unchanged because the money was also borrowed from the providers of the firm's total capital.

Rationale
✘ **equity (FCFE) will decrease by the borrowed amount.**
FCFE includes changes in debt; the firm could issue debt and then distribute the proceeds to shareholders as a dividend (although this may not be considered best practice). Therefore, the new borrowing will increase FCFE by the borrowed amount during the period. Free cash flow to the firm's capital providers remains unchanged because the money was also borrowed from the providers of the firm's total capital.

Rationale
✘ **the firm (FCFF) will decrease by the borrowed amount.**
FCFE includes changes in debt; the firm could issue debt and then distribute the proceeds to shareholders as a dividend (although this may not be considered best practice). Therefore, the new borrowing will increase FCFE by the borrowed amount during the period. Free cash flow to the firm's capital providers remains unchanged because the money was also borrowed from the providers of the firm's total capital.

Question 11
L200-PQ0029-1412
LOS: LOS-8430
Lesson Reference: Lesson 2: Forecasting Free Cash Flow
Difficulty: medium
How do net income and EBITDA, respectively, rate as proxies for cash flows in the FCFE and FCFF formulas?

- Good
- No use
- Poor

Rationale

This Answer is Correct
Net income and EBITDA are poor proxies for cash flows when using the FCFE and FCFF models.

Question 12
L2EQ-PQ3421-1411
LOS: LOS-8380
LOS: LOS-8440
LOS: LOS-8450
Lesson Reference: Lesson 3: Free Cash Flow Model Variations
Difficulty: medium

Consider the following statements:

Statement 1: Non-cash charges that appear after EBIT on the income statement must be added back to EBIT when computing FCFF.

Statement 2: The book value of non-operating assets must be added to the value obtained from the FCF model when computing the total value of a company.

Which of the following is *most* likely?

- Only Statement 1 is correct.
- Only Statement 2 is correct.
- Both statements are incorrect.

Rationale

This Answer is Correct

Only non-cash items that appear **above** EBIT (e.g., depreciation) on the income statement need to be added back to EBIT to compute FCFF.

The **market** value of non-operating assets must be added to the value obtained from the FCF model when computing the value of a company.

Question 13
L2R35TB-AC029-1512
LOS: LOS-8360
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium
An investor considering a control position in a public company and looking at various profitability and cash flow measures would *most likely* consider:

- operating cash flow (CFO).
- free cash flows to equity (FCFE).
- free cash flows to the firm (FCFF).

Rationale
operating cash flow (CFO).
FCFF considers cash flows available to all capital providers. Valuing the firm solely on equity cash flows would understate the true value by the amount of the investor's potential control position, where all free cash flows would be subject to reconfiguration.

Rationale
free cash flows to equity (FCFE).
FCFF considers cash flows available to all capital providers. Valuing the firm solely on equity cash flows would understate the true value by the amount of the investor's potential control position, where all free cash flows would be subject to reconfiguration.

Rationale
free cash flows to the firm (FCFF).
FCFF considers cash flows available to all capital providers. Valuing the firm solely on equity cash flows would understate the true value by the amount of the investor's potential control position, where all free cash flows would be subject to reconfiguration.

Question 14
L2R35TB-AC038-1512
LOS: LOS-8440
Lesson Reference: Lesson 3: Free Cash Flow Model Variations
Difficulty: medium
Liquigas, an Italian company, has determined that the recession is ending and has forecast two years of above average growth followed by growth in line with world GDP thereafter. An analyst wishing to appropriately value the firm's FCFE based on these assumptions would *most likely* consider a:

- (●) two-stage FCFE model.
- ( ) single-stage FCFE model.
- ( ) three-stage FCFE model.

Rationale
✔ **two-stage FCFE model.**

The formula for the two-stage model is:

$$V_{CE} = \sum_{t=1}^{n} \frac{\text{FCFE}_t}{(1+r_{CE})^t} + \left(\frac{\text{FCFE}_{n+1}}{r_{CE} - g} \times \frac{1}{(1+r_{CE})^n} \right)$$

This formulation allows for two years of growth at a higher rate in the first term of the equation, followed by a calculated terminal value based on constant growth in the second term of the equation.

Rationale
✘ **single-stage FCFE model.**

The formula for the two-stage model is:

$$V_{CE} = \sum_{t=1}^{n} \frac{\text{FCFE}_t}{(1+r_{CE})^t} + \left(\frac{\text{FCFE}_{n+1}}{r_{CE} - g} \times \frac{1}{(1+r_{CE})^n} \right)$$

This formulation allows for two years of growth at a higher rate in the first term of the equation, followed by a calculated terminal value based on constant growth in the second term of the equation.

Rationale
✘ **three-stage FCFE model.**

The formula for the two-stage model is:

$$V_{CE} = \sum_{t=1}^{n} \frac{\mathrm{FCFE}_t}{(1+r_{CE})^t} + \left(\frac{\mathrm{FCFE}_{n+1}}{r_{CE} - g} \times \frac{1}{(1+r_{CE})^n} \right)$$

This formulation allows for two years of growth at a higher rate in the first term of the equation, followed by a calculated terminal value based on constant growth in the second term of the equation.

Question 15
L2R35TB-AC033-1512
LOS: LOS-8380
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium
EBITDA understates free cash flow to the firm by the amount of:

- ○ interest.
- ○ depreciation.
- ◉ tax shield on depreciation.

Rationale
✗ **interest.**
The formula for FCFF shows that, of these choices, only the tax shield on depreciation (Dep × t) must be added back to EBITDA.

$$\text{FCFF} = \text{EBITDA}(1 - t) + \text{Dep}(t) - \text{WCI} - \text{FCI}$$

Rationale
✗ **depreciation.**
The formula for FCFF shows that, of these choices, only the tax shield on depreciation (Dep × t) must be added back to EBITDA.

$$\text{FCFF} = \text{EBITDA}(1 - t) + \text{Dep}(t) - \text{WCI} - \text{FCI}$$

Rationale
✓ **tax shield on depreciation.**
The formula for FCFF shows that, of these choices, only the tax shield on depreciation (Dep × t) must be added back to EBITDA.

$$\text{FCFF} = \text{EBITDA}(1 - t) + \text{Dep}(t) - \text{WCI} - \text{FCI}$$

Question 16
L2R35TB-AC012-1512
LOS: LOS-8390
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium
RandiCorp free cash flow to the firm was £1,495 million in 2012 and this cash flow is expected to increase at the world GDP growth rate of 3.5 percent, which has been constant for the last several years. An analyst estimate of RandiCorp's 2015 FCFF will be *closest* to:

- ○ £1,344 million.
- ○ £1,553 million.
- ◉ £1,658 million.

Rationale
✗ **£1,344 million.**
A 2015 forecast indicates three years of growth. Therefore, the estimated 2015 FCFF is calculated as follows:

$$\text{FCFF}_{2015} = \text{FCFF}_{2012}(1+g)^{2015-2012} = 1{,}495 \text{ million}(1+0.035)^3 = \underline{1{,}657.5 \text{ million}}$$

Rationale
✗ **£1,553 million.**
A 2015 forecast indicates three years of growth. Therefore, the estimated 2015 FCFF is calculated as follows:

$$\text{FCFF}_{2015} = \text{FCFF}_{2012}(1+g)^{2015-2012} = 1{,}495 \text{ million}(1+0.035)^3 = \underline{1{,}657.5 \text{ million}}$$

Rationale
✓ **£1,658 million.**
A 2015 forecast indicates three years of growth. Therefore, the estimated 2015 FCFF is calculated as follows:

$$\text{FCFF}_{2015} = \text{FCFF}_{2012}(1+g)^{2015-2012} = 1{,}495 \text{ million}(1+0.035)^3 = \underline{1{,}657.5 \text{ million}}$$

Question 17
L2R35TB-AC007-1512
LOS: LOS-8380
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium
An analyst wishing to calculate free cash flow to equity will, among other things, increase net income available to common shareholders by the amount of:

- ○ Working capital investment.
- ○ Fixed capital investment.
- ◉ Non-cash charges.

Rationale
✗ **Working capital investment.**
Non-cash charges are deducted in calculating net income available to common shareholders. Because they are a non-cash charge and were not an actual cash outflow, the NCC must be added back to net income to determine both FCFF and FCFE. The other choices will be subtracted from net income to calculate FCFE.

Rationale
✗ **Fixed capital investment.**
Non-cash charges are deducted in calculating net income available to common shareholders. Because they are a non-cash charge and were not an actual cash outflow, the NCC must be added back to net income to determine both FCFF and FCFE. The other choices will be subtracted from net income to calculate FCFE.

Rationale
✓ **Non-cash charges.**
Non-cash charges are deducted in calculating net income available to common shareholders. Because they are a non-cash charge and were not an actual cash outflow, the NCC must be added back to net income to determine both FCFF and FCFE. The other choices will be subtracted from net income to calculate FCFE.

Question 18
L2R35TB-ITEMSET-AC004-1512
LOS: LOS-8440
LOS: LOS-8380
LOS: LOS-8450
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium

Use the following information to answer the next 3 questions:

Binary Corporation wishes to determine whether it should consider a common share repurchase, which will depend on the intrinsic value of its common equity. Davis Willis, a financial analyst at Binary, has assembled the forecast for Binary in Table 1.

During the course of his analysis, Willis determines that the company issued share options to several employees leaving company service three years ago. Many of these past employees exercised the options prior to expiry last year. He makes the appropriate adjustment to historical data in order to determine the proper net income against which to determine a profit margin for forecasting purposes.

Willis has spoken with the Binary treasurer to determine that there are still currently 5 million common shares issued and outstanding.

Table 1 Binary Corporation Selected Forecast Data (in U.S 000s)

	1	2	3	4
Sales growth	10.00%	10.00%	10.00%	3.00%
Net income	$440.00	$484.00	$532.40	$548.37
WC investment	75.00	82.50	90.75	89.84
Incremental FC investment	150.00	165.00	181.50	179.69
Marginal tax rate	35.00%	35.00%	35.00%	35.00%
Target debt ratio	40.00%	40.00%	40.00%	40.00%
Required return on equity	9.45%	9.45%	9.45%	9.45%

i.
Willis' data could *best* be used to value the firm's equity using a:

- declining growth model.
- terminal value model.
- two-stage model.

Rationale

This Answer is Correct

A two-stage model is best, with the model having a 10% growth stage and a 3% growth stage; i.e., two constant growth stages. A declining growth model, by contrast, would have

declining growth in one of the stages. A terminal value model would be equivalent to a one-stage (constant) growth model.

Rationale

This Answer is Correct

A two-stage model is best, with the model having a 10% growth stage and a 3% growth stage; i.e., two constant growth stages. A declining growth model, by contrast, would have declining growth in one of the stages. A terminal value model would be equivalent to a one-stage (constant) growth model.

Rationale

This Answer is Correct

A two-stage model is best, with the model having a 10% growth stage and a 3% growth stage; i.e., two constant growth stages. A declining growth model, by contrast, would have declining growth in one of the stages. A terminal value model would be equivalent to a one-stage (constant) growth model.

ii.

Regarding the share options issued at severance, Willis *most likely* adjusted net income by:

- subtracting out actual cash received last year.
- adding back noncash expense in the year of issue.
- adding back any expense in the year of issue, and subtracting out actual cash received last year.

Rationale

This Answer is Incorrect

Although it is appropriate to add back the non-cash expense for share options issued at employee severance, the actual cash received at exercise would be added back as a financing cash inflow rather than as net income.

Rationale

This Answer is Incorrect

Although it is appropriate to add back the non-cash expense for share options issued at employee severance, the actual cash received at exercise would be added back as a financing cash inflow rather than as net income.

Rationale

This Answer is Incorrect
Although it is appropriate to add back the non-cash expense for share options issued at employee severance, the actual cash received at exercise would be added back as a financing cash inflow rather than as net income.

iii.
Willis' valuation of Binary's price per common share will be *closest to*:

- $10.00
- $1.80
- $12.30

Rationale
This Answer is Incorrect

Because we are valuing equity, we must first determine free cash flows to equity (FCFE) for each forecast period:

$$\text{FCFE} = \text{NI} - (1 - \text{DR})\ \text{WCI} - (1 - \text{DR})\,(\text{FCI} - \text{Dep})$$

The company has a 40 percent target debt ratio (DR), which is used in determining how much of the WCI and incremental FCI are funded by equity (i.e., 1 – DR share).

	1	2	3	4
Net income	$440.00	$484.00	$532.40	$548.37
Less: equity share of WCI	45.00	49.50	54.45	53.90
Less: equity share of FCI	90.00	99.00	108.90	107.81
FCFE	$305.00	$335.50	$369.05	$386.66

We must next determine present values for each year of the first growth stage and the present value of the terminal value for the second growth stage:

$$\begin{aligned} V_{CE} &= \sum_{t=1}^{n} \frac{\text{FCFE}_t}{(1+r_{CE})^t} + \frac{\text{FCFE}_{n+1}}{r_{CE}-g} \times \frac{1}{(1+r_{CE})^n} \\ &= \frac{305.00}{(1+0.0945)^1} + \frac{335.50}{(1+0.0945)^2} + \frac{369.05}{(1+0.0945)^3} + \frac{386.66}{0.0945-0.03} \times \frac{1}{(1+0.0945)^3} \\ &= 278.67 + 280.07 + 281.47 + 4{,}572.17 = \underline{\$5{,}412} \end{aligned}$$

The value per common share is $1.80 ($5,412,000/5,000,000).

Rationale
This Answer is Incorrect

Because we are valuing equity, we must first determine free cash flows to equity (FCFE) for each forecast period:

$$\text{FCFE} = \text{NI} - (1 - \text{DR})\ \text{WCI} - (1 - \text{DR})\,(\text{FCI} - \text{Dep})$$

The company has a 40 percent target debt ratio (DR), which is used in determining how much of the WCI and incremental FCI are funded by equity (i.e., 1 – DR share).

	1	2	3	4
Net income	$440.00	$484.00	$532.40	$548.37
Less: equity share of WCI	45.00	49.50	54.45	53.90
Less: equity share of FCI	90.00	99.00	108.90	107.81
FCFE	$305.00	$335.50	$369.05	$386.66

We must next determine present values for each year of the first growth stage and the present value of the terminal value for the second growth stage:

$$\begin{aligned} \text{V}_{\text{CE}} &= \sum_{t=1}^{n} \frac{\text{FCFE}_t}{(1+r_{\text{CE}})^t} + \frac{\text{FCFE}_{n+1}}{r_{\text{CE}} - g} \times \frac{1}{(1+r_{\text{CE}})^n} \\ &= \frac{305.00}{(1+0.0945)^1} + \frac{335.50}{(1+0.0945)^2} + \frac{369.05}{(1+0.0945)^3} + \frac{386.66}{0.0945-0.03} \times \frac{1}{(1+0.0945)^3} \\ &= 278.67 + 280.07 + 281.47 + 4{,}572.17 = \underline{\$5{,}412} \end{aligned}$$

The value per common share is $1.80 ($5,412,000/5,000,000).

Rationale

This Answer is Incorrect

Because we are valuing equity, we must first determine free cash flows to equity (FCFE) for each forecast period:

$$\text{FCFE} = \text{NI} - (1 - \text{DR})\ \text{WCI} - (1 - \text{DR})\,(\text{FCI} - \text{Dep})$$

The company has a 40 percent target debt ratio (DR), which is used in determining how much of the WCI and incremental FCI are funded by equity (i.e., 1 – DR share).

	1	2	3	4
Net income	$440.00	$484.00	$532.40	$548.37
Less: equity share of WCI	45.00	49.50	54.45	53.90
Less: equity share of FCI	90.00	99.00	108.90	107.81
FCFE	$305.00	$335.50	$369.05	$386.66

We must next determine present values for each year of the first growth stage and the present value of the terminal value for the second growth stage:

$$\begin{aligned}
\mathrm{V_{CE}} &= \textstyle\sum_{t=1}^{n} \frac{\mathrm{FCFE}_t}{(1+r_{\mathrm{CE}})^t} + \frac{\mathrm{FCFE}_{n+1}}{r_{\mathrm{CE}}-g} \times \frac{1}{(1+r_{\mathrm{CE}})^n} \\
&= \frac{305.00}{(1+0.0945)^1} + \frac{335.50}{(1+0.0945)^2} + \frac{369.05}{(1+0.0945)^3} + \frac{386.66}{0.0945-0.03} \times \frac{1}{(1+0.0945)^3} \\
&= 278.67 + 280.07 + 281.47 + 4{,}572.17 = \underline{\underline{\$5{,}412}}
\end{aligned}$$

The value per common share is $1.80 ($5,412,000/5,000,000).

Question 19
L2EQ-TB0025-1412
LOS: LOS-8380
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium
When calculating FCFF starting from net income, the amortization of a long-term bond premium in an income statement would be:

- ○ Added back to net income.
- ◉ Subtracted from net income.
- ○ Not relevant when adjusting net income to calculate FCFF.

Rationale

This Answer is Correct

The amortization of a bond premium through the income statement reduces the interest expense charged to net income relative to the actual cash coupon paid. In order to adjust for the difference, the amortization of a bond premium would be subtracted from net income.

Question 20
L2R35TB-AC040-1512
LOS: LOS-8460
Lesson Reference: Lesson 3: Free Cash Flow Model Variations
Difficulty: medium
An analyst with high and low values for various input variables to a free cash flow to equity model believes that sales growth for Bella, Incorporated will be high for the first two years, decline slightly for the next two years, and remain consistent with world GDP growth thereafter. The analyst further believes that the market required return on equity will be greater during the periods of high growth, and less thereafter. The analyst decides to use the high and low values for sales growth only, but the analyst's supervisor cautions against this course of action. The *best* explanation for the supervisor's concern is that the effect of:

- (●) lower required return on the market will significantly increase the valuation.
- ( ) the difference in growth rate will not be adequately captured in terminal value.
- ( ) higher market returns in the early periods will significantly increase the valuation.

Rationale

✅ **lower required return on the market will significantly increase the valuation.**

The best explanation for the supervisor's concern is that lower market required return on equity significantly affects valuation during the later years, especially in the terminal value calculation. Looking at the three-stage FCFE valuation formula:

$$V_{CE} = \sum_{t=1}^{x} \frac{\text{FCFE}_t}{(1+r_{CE})^t} + \sum_{t=x+1}^{y} \frac{\text{FCFE}_t}{(1+r_{CE})^t} + \frac{\text{FCFE}_{y+1}}{r_{CE}-g} \times \frac{1}{(1+r_{CE})^y}$$

It becomes clear that the denominator of the terminal value equation will be extremely important to overall valuation, especially since the higher market required return on equity occurs for only the next two years. A higher market return will lead to a greater discount rate as r_{CE} increases based on the discount rate formula:

$$r_{CE} = r_f + \beta(r_m - r_f)$$

The lower r_{CE} in the terminal value will lead to a much greater valuation for the company as the valuation multiplier (inverse of $r_{CE} - g$) increases. You should be aware of opportunities to assess the sensitivity of various inputs to the equations used in valuation.

Rationale

❌ **the difference in growth rate will not be adequately captured in terminal value.**

The best explanation for the supervisor's concern is that lower market required return on equity significantly affects valuation during the later years, especially in the terminal value calculation. Looking at the three-stage FCFE valuation formula:

$$V_{CE} = \sum_{t=1}^{x} \frac{\text{FCFE}_t}{(1+r_{CE})^t} + \sum_{t=x+1}^{y} \frac{\text{FCFE}_t}{(1+r_{CE})^t} + \frac{\text{FCFE}_{y+1}}{r_{CE}-g} \times \frac{1}{(1+r_{CE})^y}$$

It becomes clear that the denominator of the terminal value equation will be extremely important to overall valuation, especially since the higher market required return on equity occurs for only the next two years. A higher market return will lead to a greater discount rate as r_{CE} increases based on the discount rate formula:

$$r_{CE} = r_f + \beta(r_m - r_f)$$

The lower r_{CE} in the terminal value will lead to a much greater valuation for the company as the valuation multiplier (inverse of $r_{CE} - g$) increases. You should be aware of opportunities to assess the sensitivity of various inputs to the equations used in valuation.

Rationale

higher market returns in the early periods will significantly increase the valuation.

The best explanation for the supervisor's concern is that lower market required return on equity significantly affects valuation during the later years, especially in the terminal value calculation. Looking at the three-stage FCFE valuation formula:

$$V_{CE} = \sum_{t=1}^{x} \frac{\text{FCFE}_t}{(1+r_{CE})^t} + \sum_{t=x+1}^{y} \frac{\text{FCFE}_t}{(1+r_{CE})^t} + \frac{\text{FCFE}_{y+1}}{r_{CE}-g} \times \frac{1}{(1+r_{CE})^y}$$

It becomes clear that the denominator of the terminal value equation will be extremely important to overall valuation, especially since the higher market required return on equity occurs for only the next two years. A higher market return will lead to a greater discount rate as r_{CE} increases based on the discount rate formula:

$$r_{CE} = r_f + \beta(r_m - r_f)$$

The lower r_{CE} in the terminal value will lead to a much greater valuation for the company as the valuation multiplier (inverse of $r_{CE} - g$) increases. You should be aware of opportunities to assess the sensitivity of various inputs to the equations used in valuation.

Question 21
L2R35TB-AC034-1512
LOS: LOS-8390
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium

An analyst for Remley Company has assembled the following information in local currency units (LCU):

EBIT	1,456
Average tax rate	30%
Marginal tax rate	38%
Depreciation	3,316
Working capital investment	1,310
Fixed capital investment	2,911
New borrowing	2,688

Assuming Remley's only non-cash charge is depreciation expense, the analyst will calculate FCFE *closest* to:

- LCU630.
- LCU2,686.
- LCU2,802.

Rationale
LCU630.

Recognizing that the analyst should use the marginal tax rate, the FCFE calculation is:

$$\begin{aligned}\text{FCFF} &= \text{EBIT}(1-t) + \text{Dep-WCI-FCI} + \Delta\text{d} \\ &= 1{,}456(1-0.38) + 3{,}316 - 1{,}310 - 2{,}911 + 2{,}688 = \underline{\text{LCU2,686}}\end{aligned}$$

Note that this formula beginning with EBIT requires adding the entire amount of depreciation, unlike the EBITDA formulation which only adds the depreciation tax shield.

Rationale
LCU2,686.

Recognizing that the analyst should use the marginal tax rate, the FCFE calculation is:

$$\begin{aligned}\text{FCFF} &= \text{EBIT}(1-t) + \text{Dep-WCI-FCI} + \Delta\text{d} \\ &= 1{,}456(1-0.38) + 3{,}316 - 1{,}310 - 2{,}911 + 2{,}688 = \underline{\text{LCU2,686}}\end{aligned}$$

Note that this formula beginning with EBIT requires adding the entire amount of depreciation, unlike the EBITDA formulation which only adds the depreciation tax shield.

Rationale

LCU2,802.

Recognizing that the analyst should use the marginal tax rate, the FCFE calculation is:

$$\begin{aligned}\text{FCFF} &= \text{EBIT}(1-t) + \text{Dep-WCI-FCI} + \Delta\text{d} \\ &= 1{,}456(1-0.38) + 3{,}316 - 1{,}310 - 2{,}911 + 2{,}688 = \underline{\text{LCU2,686}}\end{aligned}$$

Note that this formula beginning with EBIT requires adding the entire amount of depreciation, unlike the EBITDA formulation which only adds the depreciation tax shield.

Question 22
L2R35TB-AC022-1512
LOS: LOS-8360
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium
Which of the following appropriately considers a company's cash expenditures on new plant and equipment (incremental FCI)?

- Earnings before interest, taxes, depreciation, and amortization (EBITDA).
- Cash flow from operations (CFO).
- Free cash flow to the firm (FCFF).

Rationale
Earnings before interest, taxes, depreciation, and amortization (EBITDA).
FCFF subtracts fixed capital investment (FCI) from net income (or other form of income stream). EBITDA fails to include even the replacement of capital (Dep), while CFO recognizes the cash flows associated with working capital, but does not consider FCI.

Rationale
Cash flow from operations (CFO).
FCFF subtracts fixed capital investment (FCI) from net income (or other form of income stream). EBITDA fails to include even the replacement of capital (Dep), while CFO recognizes the cash flows associated with working capital, but does not consider FCI.

Rationale
Free cash flow to the firm (FCFF).
FCFF subtracts fixed capital investment (FCI) from net income (or other form of income stream). EBITDA fails to include even the replacement of capital (Dep), while CFO recognizes the cash flows associated with working capital, but does not consider FCI.

Question 23
L2EQ-TBB216-1412
LOS: LOS-8400
Lesson Reference: Lesson 2: Forecasting Free Cash Flow
Difficulty: medium
When calculating free cash flow to equity from the uses of free cash flow, the impact of a payment of dividends to common equity shareholders would *most likely:*

- Not affect free cash flow to equity.
- Increase free cash flow to equity.
- Decrease free cash flow to equity.

Rationale

This Answer is Correct
When calculating free cash flow to equity from the *uses* of free cash flow, FCFE is calculated as increase in cash plus cash dividends plus share repurchases.

Question 24
L2EQ-PQ3420-1411
LOS: LOS-8380
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium
Assuming IFRS applies, in which of the following cases is an adjustment to CFO *least* likely required in computing FCFF from CFO.

- (●) If interest received is classified as an operating activity.
- ( ) If interest paid is classified as an operating activity.
- ( ) If dividends paid is classified as an operating activity.

Rationale

This Answer is Correct

Interest received can be classified as CFO or CFI. Only if it is classified as CFI should it be added to CFO to compute FCFF.

Interest paid can be classified as CFO or CFF. Only if it is classified as CFO should after-tax interest paid be added back to CFO to compute FCFF.

If dividends paid are classified as CFO, they must be added back to CFO to compute cash available to all providers of capital.

Question 25
L2R35TB-AC015-1512
LOS: LOS-8450
Lesson Reference: Lesson 3: Free Cash Flow Model Variations
Difficulty: medium
Moda, Inc. has free cash flow to the firm (FCFF) of €130 million in the year just ended and weighted average cost of capital (WACC) of 12.7 percent. Moda expects its FCFF to grow at 3.5 percent indefinitely. Moda's value to all suppliers of capital will be *closest to*:

- ○ €1,059 million.
- ○ €1,413 million.
- ◉ €1,463 million.

Rationale
✗ **€1,059 million.**
The value of a firm to all capital suppliers is the value of the firm (VF), in this case using the Gordon Model formulation for constant growth:

$$V_F = \sum_{n=1}^{\infty} \frac{\text{FCFF}_n}{(1+\text{WACC})^n} = \frac{\text{FCFF}_1}{\text{WACC} - g} = \frac{130 \text{ million}(1+0.035)}{0.127 - 0.035} = \underline{1{,}462.5 \text{ million}}$$

Rationale
✗ **€1,413 million.**
The value of a firm to all capital suppliers is the value of the firm (VF), in this case using the Gordon Model formulation for constant growth:

$$V_F = \sum_{n=1}^{\infty} \frac{\text{FCFF}_n}{(1+\text{WACC})^n} = \frac{\text{FCFF}_1}{\text{WACC} - g} = \frac{130 \text{ million}(1+0.035)}{0.127 - 0.035} = \underline{1{,}462.5 \text{ million}}$$

Rationale
✓ **€1,463 million.**
The value of a firm to all capital suppliers is the value of the firm (VF), in this case using the Gordon Model formulation for constant growth:

$$V_F = \sum_{n=1}^{\infty} \frac{\text{FCFF}_n}{(1+\text{WACC})^n} = \frac{\text{FCFF}_1}{\text{WACC} - g} = \frac{130 \text{ million}(1+0.035)}{0.127 - 0.035} = \underline{1{,}462.5 \text{ million}}$$

Question 26
L2R35TB-AC008-1512
LOS: LOS-8380
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium
In 2010, Big Machines, Inc. reported non-cash restructuring charges of $12,500 on the income statement. It expects to pay $2,500 in cash settlement expenses in 2014, the first forecast period. Which of the following is correct with regard to an analyst's treatment of these charges for free cash flow (FCF) analysis and forecasting purposes?

- (●) Add $12,500 to net income in the period where it occurred.
- ( ) Add $10,000 to net income for purposes of FCF analysis.
- ( ) Ignore the $2,500 cash payment in 2014.

Rationale

Add $12,500 to net income in the period where it occurred.

The entire $12,500 in non-cash charges was deducted from net income. If this entire charge is not added back to net income, it will appear as if the firm had $12,500 less in FCF than it actually did. Understating FCF in prior periods may bias various relationships used for forecasting FCF. The $2,500 cash payment expected in 2014, however, should be recognized as reducing FCF.

Rationale

Add $10,000 to net income for purposes of FCF analysis.

The entire $12,500 in non-cash charges was deducted from net income. If this entire charge is not added back to net income, it will appear as if the firm had $12,500 less in FCF than it actually did. Understating FCF in prior periods may bias various relationships used for forecasting FCF. The $2,500 cash payment expected in 2014, however, should be recognized as reducing FCF.

Rationale

Ignore the $2,500 cash payment in 2014.

The entire $12,500 in non-cash charges was deducted from net income. If this entire charge is not added back to net income, it will appear as if the firm had $12,500 less in FCF than it actually did. Understating FCF in prior periods may bias various relationships used for forecasting FCF. The $2,500 cash payment expected in 2014, however, should be recognized as reducing FCF.

Question 27
L2EQ-TBB217-1412
LOS: LOS-8400
Lesson Reference: Lesson 2: Forecasting Free Cash Flow
Difficulty: medium
A company has a target debt ratio of 40% of assets. In the most recent period, they have generated net income of $500 million, with the only noncash charge in the income statement being a depreciation charge of $100 million. The company invested $200 million in fixed assets, and working capital on the balance sheet increased by $50 million. The free cash flow to equity of the firm is closest to:

- (●) $410 million.
- ( ) $440 million.
- ( ) $450 million.

Rationale

This Answer is Correct

Free cash flow to equity (FCFE) can be written as:

FCFE = NI – (1 – DR)[(FCInv – Depreciation) + WCInv]

= 500 – (1 – 0.4)[(200 – 100) + 50] = 500 – (0.6 × 150) = 410.

Question 28

L2EQ-TB0024-1412

LOS: LOS-8380

Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches

Difficulty: medium

Under U.S. GAAP, which of the following adjustments would be required to get to FCFF when starting from net income but not when starting from CFO?

- Adding back posttax interest.
- Subtracting investment in fixed capital.
- Subtracting investment in working capital.

Rationale

This Answer is Correct

Investment in working capital is an adjustment that is required when starting from net income, but not when starting from CFO since CFO has already been adjusted to reflect changes in noncash working capital. Posttax interest needs to be added back to both net income and CFO under U.S. GAAP since interest paid is classified as CFO under U.S. GAAP. Fixed capital investment needs to be adjusted for whether starting from net income or CFO.

Question 29
L2R35TB-AC013-1512
LOS: LOS-8390
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium
An analyst has estimated that Diamond, Inc. had 2012 sales of $5,535 million, a 10.7 percent increase over the prior year. Historically, working capital increased by 14.9 percent of the dollar increase in sales and Diamond has an EBIT margin of 18 percent. In forecasting the 2012 FCFF, the working capital investment amount that the analyst estimates for the FCFF calculation is *closest to*:

- (●) $79.7 million and it reduces FCFF.
- ( ) $79.7 million and it increases FCFF.
- ( ) $96.3 million and it increases FCFF.

Rationale
✔ **$79.7 million and it reduces FCFF.**

Sales in the prior period were $5,000 million [$5,535 million / (1 + 0.107)]. The 2012 estimated sales represent an increase of $535 million ($5,535 – 5,000). The change in working capital used in the FCFF calculation is:

$$\text{WCI} = \$535 \text{ million} \times 0.149 = \underline{\$79.7 \text{ million}}$$

Working capital investment decreases cash flows to the firm's capital providers, so this would be a $79.7 million downward adjustment to net income.

Rationale
✘ **$79.7 million and it increases FCFF.**

Sales in the prior period were $5,000 million [$5,535 million / (1 + 0.107)]. The 2012 estimated sales represent an increase of $535 million ($5,535 – 5,000). The change in working capital used in the FCFF calculation is:

$$\text{WCI} = \$535 \text{ million} \times 0.149 = \underline{\$79.7 \text{ million}}$$

Working capital investment decreases cash flows to the firm's capital providers, so this would be a $79.7 million downward adjustment to net income.

Rationale

$96.3 million and it increases FCFF.

Sales in the prior period were $5,000 million [$5,535 million / (1 + 0.107)]. The 2012 estimated sales represent an increase of $535 million ($5,535 – 5,000). The change in working capital used in the FCFF calculation is:

$$\text{WCI} = \$535 \text{ million} \times 0.149 = \underline{\$79.7 \text{ million}}$$

Working capital investment decreases cash flows to the firm's capital providers, so this would be a $79.7 million downward adjustment to net income.

Question 30
L2R35TB-AC020-1512
LOS: LOS-8450
Lesson Reference: Lesson 3: Free Cash Flow Model Variations
Difficulty: medium

Besos, Inc. has normalized FCFE of 85 million Brazilian real (BRL) for the period just ended. The long-term real growth rate for Brazil is expected to be 3.5 percent with Besos' growing at a 1 percent higher rate as they expand internationally. Required returns and adjustments in percentages are:

Real country r_{CE}	7.00
Industry adjustment	(0.75)
Company size	0.43
Company debt	0.25

The value of Besos' equity is *closest to*:

- 2,455 million BRL.
- 3,650 million BRL.
- 5,375 million BRL.

Rationale
2,455 million BRL.

Adjusted r_{CE} is:

Real country r_{CE}	7.00
Industry adjustment	(0.75)
Company size	0.43
Company debt	0.25
Adj r_{CE}	6.93

The value of Besos' equity is:

$$V_{CE} = \frac{FCFF_n}{r_{CE} - g} = \frac{85[1 + (0.035 + 0.01)]}{0.0693 - 0.0450} = \frac{88.825}{0.0243} = 3{,}655.35$$

Rationale
3,650 million BRL.

Adjusted r_{CE} is:

Real country r_{CE}	7.00
Industry adjustment	(0.75)
Company size	0.43
Company debt	0.25
Adj r_{CE}	6.93

The value of Besos' equity is:

$$V_{CE} = \frac{FCFF_n}{r_{CE} - g} = \frac{85[1 + (0.035 + 0.01)]}{0.0693 - 0.0450} = \frac{88.825}{0.0243} = 3{,}655.35$$

Rationale

5,375 million BRL.

Adjusted r_{CE} is:

Real country r_{CE}	7.00
Industry adjustment	(0.75)
Company size	0.43
Company debt	0.25
Adj r_{CE}	6.93

The value of Besos' equity is:

$$V_{CE} = \frac{FCFF_n}{r_{CE} - g} = \frac{85[1 + (0.035 + 0.01)]}{0.0693 - 0.0450} = \frac{88.825}{0.0243} = 3{,}655.35$$

Question 31
L2R35TB-AC028-1512
LOS: LOS-8380
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium
An analyst has already calculated FCFE. If she starts with her calculated FCFE, she can find FCFF by:

- subtracting unshielded interest costs [I (1 – *t*)] and adding new borrowing.
- adding unshielded interest costs [I (1 – *t*)] and subtracting new borrowing.
- subtracting unshielded interest costs [I (1 – *t*)] and subtracting new borrowing.

Rationale
subtracting unshielded interest costs [I (1 – *t*)] and adding new borrowing.
The relationship between FCFE and FCFF is:

$$\text{FCFE} = \text{FCFF} - \text{I}(1-t) + \Delta\text{d}$$
$$\text{FCFF} = \text{FCFE} + \text{I}(1-t) - \Delta\text{d}$$

Rationale
adding unshielded interest costs [I (1 – *t*)] and subtracting new borrowing.
The relationship between FCFE and FCFF is:

$$\text{FCFE} = \text{FCFF} - \text{I}(1-t) + \Delta\text{d}$$
$$\text{FCFF} = \text{FCFE} + \text{I}(1-t) - \Delta\text{d}$$

Rationale
subtracting unshielded interest costs [I (1 – *t*)] and subtracting new borrowing.
The relationship between FCFE and FCFF is:

$$\text{FCFE} = \text{FCFF} - \text{I}(1-t) + \Delta\text{d}$$
$$\text{FCFF} = \text{FCFE} + \text{I}(1-t) - \Delta\text{d}$$

Question 32
L2EQ-PQ3418-1411
LOS: LOS-8380
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium
Which of the following is *most* likely subtracted from net income to compute FCFF?

- ○ Impairment of intangible assets.
- ◉ Amortization of long-term bond premiums.
- ○ Restructuring expenses.

Rationale

This Answer is Correct

Impairment charges on intangible assets and restructuring expenses are added back to net income to compute FCFF. Amortization of any bond premium is subtracted.

Question 33
L200-PQ0028-1412
LOS: LOS-8420
Lesson Reference: Lesson 2: Forecasting Free Cash Flow
Difficulty: medium
How do dividends, share repurchases, and share issuances affect the FCFF and FCFE forecasting models?

- (●) They have no impact on FCFF or FCFE.
- ( ) They have a negative impact on FCFF or FCFE.
- ( ) They have a positive impact on FCFF or FCFE.

Rationale

This Answer is Correct

Dividends, share repurchases, and share issuances do not show up in the FCFF and FCFE formulas. Therefore, they have no impact on FCFF or FCFE.

Question 34
L2EQ-PQ3407-1411
LOS: LOS-8380
LOS: LOS-8390
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium

Selected information regarding Gamma Corporation is given below:

EBITDA = $1,248,950

Interest expense = $285,250

Fixed capital expenditures = $675,285

Depreciation expense = $250,455

Working capital investment = $180,655

Given a tax rate of 35%, free cash flow to the firm is *closest to*:

- $206,333
- $43,537
- $228,950

Rationale

This Answer is Correct

FCFF = EBITDA (1 − Tax rate) + Depreciation (Tax rate) − FCInv − WCInv

FCFF = [1,248,950 (1 − 0.35)] + (250,455 × 0.35) − 675,285 − 180,655

FCFF = $43,536.75

Question 35
L2EQ-PQ3419-1411
LOS: LOS-8380
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium
Given that a company follows U.S. GAAP, which of the following items must be added to CFO to compute FCFF?

- (●) After-tax interest expense.
- ( ) Dividends paid.
- ( ) Dividends received.

Rationale

This Answer is Correct

Dividends received are classified as CFO. Since they are available to the firm's providers of capital, no related adjustment to CFO is required to compute FCFF.

Dividends paid are classified as CFF. Since they have not been deducted from CFO, no related adjustment to CFO is required to compute FCFF.

After-tax interest expense is deducted in computing CFO. Therefore, it must be added back to

CFO to compute cash available to all providers of capital.

Question 36
L2R35TB-AC018-1512
LOS: LOS-8450
Lesson Reference: Lesson 3: Free Cash Flow Model Variations
Difficulty: medium
A different analyst following Balboa, Inc. has estimated that FCFE will increase by 20 percent the first year, 10 percent the second year, 5 percent the third year, and 4 percent thereafter. Last period FCFE was $180 million and the shareholders are pricing the company at a 12 percent required return. The analyst's estimate of the value of the company's common equity is *closest to*:

- $2,620 million.
- $2,780 million.
- $2,868 million.

Rationale
$2,620 million.

Balboa's value of common equity is:

$$\begin{aligned} V_{CE} &= \sum_{t=1}^{n} \frac{\text{FCFE}_t}{(1+r_{CE})^t} + \left(\frac{\text{FCFE}_{n+1}}{r_{CE}-g} \times \frac{1}{(1+r_{CE})^n} \right) \\ &= \frac{\$180(0.20)}{(1+0.12)^1} + \frac{180(1.20)(1.10)}{(1+0.12)^2} + \frac{180(1.20)(1.10)(1.05)}{(1+0.12)^3} \\ &\quad + \left(\frac{[180(1.20)(1.10)(1.05)](1+0.04)}{0.12-0.04} \times \frac{1}{(1+0.12)^3} \right) \\ &= 192.86 + 189.41 + 177.58 + \frac{3{,}243.24}{(1.12)^3} \\ &\quad \$2{,}868.32 \end{aligned}$$

Rationale
$2,780 million.

Balboa's value of common equity is:

$$\begin{aligned} V_{CE} &= \sum_{t=1}^{n} \frac{\text{FCFE}_t}{(1+r_{CE})^t} + \left(\frac{\text{FCFE}_{n+1}}{r_{CE}-g} \times \frac{1}{(1+r_{CE})^n} \right) \\ &= \frac{\$180(0.20)}{(1+0.12)^1} + \frac{180(1.20)(1.10)}{(1+0.12)^2} + \frac{180(1.20)(1.10)(1.05)}{(1+0.12)^3} \\ &\quad + \left(\frac{[180(1.20)(1.10)(1.05)](1+0.04)}{0.12-0.04} \times \frac{1}{(1+0.12)^3} \right) \\ &= 192.86 + 189.41 + 177.58 + \frac{3{,}243.24}{(1.12)^3} \\ &\quad \$2{,}868.32 \end{aligned}$$

Rationale

$2,868 million.

Balboa's value of common equity is:

$$
\begin{aligned}
V_{CE} &= \sum_{t=1}^{n} \frac{\text{FCFE}_t}{(1+r_{CE})^t} + \left(\frac{\text{FCFE}_{n+1}}{r_{CE}-g} \times \frac{1}{(1+r_{CE})^n} \right) \\
&= \frac{\$180(0.20)}{(1+0.12)^1} + \frac{180(1.20)(1.10)}{(1+0.12)^2} + \frac{180(1.20)(1.10)(1.05)}{(1+0.12)^3} \\
&\quad + \left(\frac{[180(1.20)(1.10)(1.05)](1+0.04)}{0.12-0.04} \times \frac{1}{(1+0.12)^3} \right) \\
&= 192.86 + 189.41 + 177.58 + \frac{3{,}243.24}{(1.12)^3} \\
&\quad \$2{,}868.32
\end{aligned}
$$

Question 37
L2R35TB-AC009-1512
LOS: LOS-8380
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium
Big Machines, Inc. expects a large capital expenditure in mid-2014 for a plant to produce a new line of earth moving equipment. The firm expects no sales in 2014, increasing long-term credit sales in 2015 and 2016 with no payments due until 2016, and explosive sales growth in following periods. Inventory will begin accumulating in 2015 as the plant comes online and sales commence. The effects of these assumptions about the project will *most likely* result in a working capital investment:

- ○ increase in 2014.
- ○ decrease in 2015.
- ◉ decrease in 2016.

Rationale
✗ **increase in 2014.**
The fixed capital expenditure will definitely decrease free cash flows in 2014, but no conclusion can be assumed about 2014 working capital investment because insufficient information is provided. As credit sales expand, sales and accounts receivable (working capital) will increase rather than decrease in 2015, but cash inflows from the project will not. Changes in inventory and other cash expenses will have stabilized by 2016, causing much smaller changes in working capital.

Rationale
✗ **decrease in 2015.**
The fixed capital expenditure will definitely decrease free cash flows in 2014, but no conclusion can be assumed about 2014 working capital investment because insufficient information is provided. As credit sales expand, sales and accounts receivable (working capital) will increase rather than decrease in 2015, but cash inflows from the project will not. Changes in inventory and other cash expenses will have stabilized by 2016, causing much smaller changes in working capital.

Rationale
✓ **decrease in 2016.**
The fixed capital expenditure will definitely decrease free cash flows in 2014, but no conclusion can be assumed about 2014 working capital investment because insufficient information is provided. As credit sales expand, sales and accounts receivable (working capital) will increase rather than decrease in 2015, but cash inflows from the project will not. Changes in inventory and other cash expenses will have stabilized by 2016, causing much smaller changes in working capital.

Question 38
L2EQ-PQ3402-1411
LOS: LOS-8380
LOS: LOS-8390
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium

Selected information regarding Lompriya Ltd. is given below:

Net income = $1,528,500

Interest expense = $255,550

Depreciation expense = $398,000

Amortization of long-term bond discounts = $18,290

Fixed capital investment = $588,525

Working capital investment = $251,180

Net borrowing = $125,600

Given a tax rate of 40%, free cash flow available to holders of common equity is *closest to*:

- $1,384,015
- $1,212,395
- $1,230,685

Rationale

This Answer is Correct

FCFE = NI + NCC − FCInv − WCInv + Net borrowing

FCFE = 1,528,500 + (398,000 + 18,290) − 588,525 − 251,180 + 125,600

FCFE = $1,230,685

Question 39
L2R35TB-AC035-1512
LOS: LOS-8390
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium

Reeperbahn Corporation wishes to repurchase common shares in the market when they are significantly undervalued. In order to do that, the CFO wants to compare the market value of common equity with the fair value based on free cash flow analysis. Toward that end, a financial analyst has compiled the following information regarding the first forecast year of the planning period (currency in millions of EUR):

Net income	€440.00
Interest (1 – *t*)	€110.00
WCI	€75.00
Incremental FCI	€166.67
Target debt ratio (DR)	40.00%

Based on this information, the analyst will forecast Reeperbahn's first year free cash flow to equity (FCFE) will be *closest to*:

- €205 million.
- €295 million.
- €405 million.

Rationale
€205 million.

Using the formula:

$$\begin{aligned}\text{FCFE} &= \text{NI} - (1 - \text{DR})\text{WCI} - (1 - \text{DR})(\text{FCI-Dep}) \\ &= 440.00 - (1 - 0.40)(75.00) - (1 - 0.40)(166.67) = \underline{295\ million}\end{aligned}$$

Note that FCI less depreciation equals incremental cash flows, so the depreciation figure is not required to solve the problem. Also, an FCFE calculation beginning from net income does not need to subtract the unshielded portion of interest as unavailable to common equity capital providers (i.e., it is already subtracted out of net income).

Rationale
€295 million.

Using the formula:

$$\begin{aligned}&\text{FCFE} = \text{NI} - (1 - \text{DR})\text{WCI} - (1 - \text{DR})(\text{FCI-Dep})\\&= 440.00 - (1 - 0.40)(75.00) - (1 - 0.40)(166.67) = \underline{295\ million}\end{aligned}$$

Note that FCI less depreciation equals incremental cash flows, so the depreciation figure is not required to solve the problem. Also, an FCFE calculation beginning from net income does not need to subtract the unshielded portion of interest as unavailable to common equity capital providers (i.e., it is already subtracted out of net income).

Rationale

€405 million.

Using the formula:

$$\begin{aligned}&\text{FCFE} = \text{NI} - (1 - \text{DR})\text{WCI} - (1 - \text{DR})(\text{FCI-Dep})\\&= 440.00 - (1 - 0.40)(75.00) - (1 - 0.40)(166.67) = \underline{295\ million}\end{aligned}$$

Note that FCI less depreciation equals incremental cash flows, so the depreciation figure is not required to solve the problem. Also, an FCFE calculation beginning from net income does not need to subtract the unshielded portion of interest as unavailable to common equity capital providers (i.e., it is already subtracted out of net income).

Question 40
L2EQ-PQ3415-1411
LOS: LOS-8440
LOS: LOS-8450
LOS: LOS-8470
Lesson Reference: Lesson 3: Free Cash Flow Model Variations
Difficulty: medium

Shamrock Ltd.'s most recent FCFE per share amounted to $0.6. An analyst has the following expectations regarding the company's growth in FCFE:

- FCFE will grow at a rate of 40% for the next three years, during which investors' required rate of return will be 20%.
- FCFE growth will be 25% in period 4 and 10% in period 5. During this time, investors' required rate of return will be 16%.
- From Year 6 onwards, FCFE will grow at a stable long-term growth rate of 10%, during which investors' required rate of return will be 12%.

The intrinsic value of the company's stock today is *closest* to:

- $59
- $58
- $56

Rationale

This Answer is Correct

		High-Growth Period			Transitional Period		Stable Growth
		g = 40%			g = 25%	g = 10%	g = 10%
Years	**0**	**1**	**2**	**3**	**4**	**5**	**6**
FCFE ($)	0.60	0.84	1.18	1.65	2.06	2.27	2.50
Terminal value in Year 5						125	
Discount factors		0.8333	0.6944	0.5787	0.4989	0.4301	
Present values		0.70	0.82	0.95	1.03	54.73	
Sum of present values	**58.23**						

Question 41
L2EQ-TBX110-1502
LOS: LOS-8430
Lesson Reference: Lesson 2: Forecasting Free Cash Flow
Difficulty: easy

Natasha Knecht, CFA, is responsible for supervising a team of equity analysts and has asked the team to investigate contemporary methods in valuation, particularly free cash flow valuation. During a meeting reviewing their findings, various team members make the following comments:

Comment 1:

Free cash flow to the firm can be derived easily by taxing EBITDA and subtracting fixed and working capital investment

Comment 2:

Free cash flow to equity can be easily derived by taking net income, adding back noncash charges and subtracting fixed and working capital investment.

How many of the comments are accurate?

- (●) None.
- ( ) One.
- ( ) Two.

Rationale

This Answer is Correct

Comment 1 is incorrect because it fails to add back the depreciation tax shield. Comment 2 is incorrect because it fails to consider net borrowing.

Question 42
L200-PQ0027-1412
LOS: LOS-8400
Lesson Reference: Lesson 2: Forecasting Free Cash Flow
Difficulty: medium
Which of the following is not a factor used when forecasting with the FCFF and FCFE modeling techniques?

- Noncash charges
- Pretax operating income
- Investments in fixed and working capital

Rationale

This Answer is Correct
After-tax operating income, not pretax operating income, is one of the components of FCFF and FCFE modeling.

Question 43
L2R35TB-AC019-1512
LOS: LOS-8450
Lesson Reference: Lesson 3: Free Cash Flow Model Variations
Difficulty: medium

Bonny Corporation has current period FCFF of $500 million and an analyst has projected the following FCFF growth rates:

Rate	Years
7.5 percent	1 through 3
5.0 percent	4 through 6
4.0 percent	thereafter

If Bonny Corporation's weighted-average cost of capital is 10 percent, the analyst will estimate the firm's total value to be *closest to*:

- $6,930 million.
- $9,105 million.
- $9,745 million.

Rationale
$6,930 million.
The total firm value:

$$
\begin{aligned}
V_F &= \sum_{t=1}^{x} \frac{FCFF_t}{(1+\text{WACC})^t} + \sum_{t=x+1}^{y} \frac{FCFF_t}{(1+\text{WACC})^t} + \frac{FCFF_{y+1}}{\text{WACC}-\text{g}} \times \frac{1}{(1+\text{WACC})^y} \\
&= \frac{500(1+0.075)}{(1+0.10)^1} + \frac{500(1.075)^2}{(1+0.10)^2} + \frac{500(1.075)^3}{(1+0.10)^3} + \frac{500(1.075)^3(1+0.05)}{(1+0.10)^4} \\
&\quad + \frac{500(1.075)^3(1.05)^2}{(1+0.10)^5} + \frac{500(1.075)^3(1.05)^3}{(1+0.10)^6} + \frac{500(1.075)^3(1.05)^3(1.04)}{0.10-0.04} \times \frac{1}{(1+0.10)^6} \\
&\quad 4.88.64 + 477.53 + 466.68 + 445.47 + 425.22 + 405.89 + 7{,}035.41 \\
&= 9{,}745
\end{aligned}
$$

Rationale
$9,105 million.
The total firm value:

$$
\begin{aligned}
V_F &= \sum_{t=1}^{x} \frac{FCFF_t}{(1+\text{WACC})^t} + \sum_{t=x+1}^{y} \frac{FCFF_t}{(1+\text{WACC})^t} + \frac{FCFF_{y+1}}{\text{WACC}-\text{g}} \times \frac{1}{(1+\text{WACC})^y} \\
&= \frac{500(1+0.075)}{(1+0.10)^1} + \frac{500(1.075)^2}{(1+0.10)^2} + \frac{500(1.075)^3}{(1+0.10)^3} + \frac{500(1.075)^3(1+0.05)}{(1+0.10)^4} \\
&\quad + \frac{500(1.075)^3(1.05)^2}{(1+0.10)^5} + \frac{500(1.075)^3(1.05)^3}{(1+0.10)^6} + \frac{500(1.075)^3(1.05)^3(1.04)}{0.10-0.04} \times \frac{1}{(1+0.10)^6} \\
&\quad 4.88.64 + 477.53 + 466.68 + 445.47 + 425.22 + 405.89 + 7{,}035.41 \\
&= 9{,}745
\end{aligned}
$$

Rationale

$9,745 million.

The total firm value:

$$
\begin{aligned}
V_F &= \sum_{t=1}^{x} \frac{FCFF_t}{(1+\text{WACC})^t} + \sum_{t=x+1}^{y} \frac{FCFF_t}{(1+\text{WACC})^t} + \frac{FCFF_{y+1}}{\text{WACC}-\text{g}} \times \frac{1}{(1+\text{WACC})^y} \\
&= \frac{500(1+0.075)}{(1+0.10)^1} + \frac{500(1.075)^2}{(1+0.10)^2} + \frac{500(1.075)^3}{(1+0.10)^3} + \frac{500(1.075)^3(1+0.05)}{(1+0.10)^4} \\
&\quad + \frac{500(1.075)^3(1.05)^2}{(1+0.10)^5} + \frac{500(1.075)^3(1.05)^3}{(1+0.10)^6} + \frac{500(1.075)^3(1.05)^3(1.04)}{0.10-0.04} \times \frac{1}{(1+0.10)^6} \\
&\quad 4.88.64 + 477.53 + 466.68 + 445.47 + 425.22 + 405.89 + 7{,}035.41 \\
&= 9{,}745
\end{aligned}
$$

Question 44

L2EQ-TB0026-1412

LOS: LOS-8380

Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches

Difficulty: medium

When calculating FCFF starting from EBIT, an analyst should:

- ○ Not adjust for depreciation.
- ◉ Add back depreciation.
- ○ Add back depreciation multiplied by the tax rate.

Rationale

This Answer is Correct

When calculating FCFF starting from EBIT, an analyst should add back depreciation since it is a noncash charge that has lowered the starting point, namely, EBIT. When starting from EBITDA, technically there is no adjustment required for depreciation since it was not removed from the starting point, namely, EBITDA.

Question 45
L2EQ-PQ3414-1411
LOS: LOS-8440
LOS: LOS-8450
LOS: LOS-8470
Lesson Reference: Lesson 3: Free Cash Flow Model Variations
Difficulty: medium

An analyst wants to estimate the value of Simco Inc. and gathers the following information:

Current year FCFF = $3.5 million

Expected growth rate in FCFF for the next 4 years = 12%

Long-term constant growth rate from Year 5 onwards = 5%

WACC during the high-growth phase = 15%

WACC during the mature phase = 11%

The value of the firm today is *closest to*:

- $48.63 million
- $77.81 million
- $68.21 million

Rationale
This Answer is Correct

$FCFF_1 = \$3.5m \times 1.12 = \$3.92m$

$FCFF_2 = \$3.5m \times 1.12^2 = \$4.3904m$

$FCFF_3 = \$3.5m \times 1.12^3 = \$4.9172m$

$FCFF_4 = \$3.5m \times 1.12^4 = \$5.5073m$

$FCFF_5 = \$5.5073m \times 1.05 = \$5.7827m$

Terminal value at the end of Year 4 = $5.7827 / (0.11 − 0.05) = $96.3783 million

Value of the firm today can be calculated as:

[CF] [2^{ND}] [CE|C]

[ENTER] [↓]

3.92 [ENTER] [↓] [↓]

4.3904 [ENTER] [↓] [↓]

4.9172 [ENTER] [↓] [↓]

101.8856 [ENTER] [NPV]

15 [ENTER] [↓] [CPT]

NPV = $68.21 million

Question 46
L2R35TB-AC036-1512
LOS: LOS-8450
Lesson Reference: Lesson 3: Free Cash Flow Model Variations
Difficulty: medium

Walker Corporation wishes to repurchase common shares in the market when they are significantly undervalued. In order to do that, the CFO wants to compare the market value of common equity with the fair value based on free cash flow analysis. Toward that end, an analyst has compiled the following information regarding the first forecast year of the planning period (currency in millions):

Forecast free cash flow to equity ($FCFE_1$)	€620.00
Growth rate	10.0%
Required return on equity	14.4%

Using a single-stage valuation model, the analyst will calculate a value for Walker's common equity that is *closest to*:

- $4.7 billion.
- $14.1 billion.
- €15.5 billion.

Rationale
$4.7 billion.
The solution is as follows:

$$V_{CE} = \sum_{t=1}^{\infty} \frac{\text{FCFE}_t}{(1+r_{CE})^t} = \frac{\text{FCFE}_0(1+g)}{r_{CE}-g} = \frac{\text{FCFE}_1}{r_{CE}-g} = \frac{620.00}{0.144-0.10} = \underline{14{,}090 \text{ billion}}$$

Rationale
$14.1 billion.
The solution is as follows:

$$V_{CE} = \sum_{t=1}^{\infty} \frac{\text{FCFE}_t}{(1+r_{CE})^t} = \frac{\text{FCFE}_0(1+g)}{r_{CE}-g} = \frac{\text{FCFE}_1}{r_{CE}-g} = \frac{620.00}{0.144-0.10} = \underline{14{,}090 \text{ billion}}$$

Rationale
€15.5 billion.

The solution is as follows:

$$V_{CE} = \sum_{t=1}^{\infty} \frac{\text{FCFE}_t}{(1+r_{CE})^t} = \frac{\text{FCFE}_0(1+g)}{r_{CE}-g} = \frac{\text{FCFE}_1}{r_{CE}-g} = \frac{620.00}{0.144-0.10} = \underline{\underline{\text{14,090 billion}}}$$

Question 47
L2R35TB-AC017-1512
LOS: LOS-8450
Lesson Reference: Lesson 3: Free Cash Flow Model Variations
Difficulty: medium
An analyst following Balboa, Inc. determines that FCFE will increase by 20 percent for the next three years and 4 percent thereafter. Last period FCFE was $180 million and the shareholders are pricing the company at a 12 percent required return. The analyst's estimate of the value of the company's common equity is *closest to*:

- $3,190 million.
- $3,499 million.
- $3,738 million.

Rationale
$3,190 million.
Balboa's value of common equity is:

$$\begin{aligned} V_{CE} &= \sum_{t=1}^{n} \frac{\text{FCFE}_t}{(1+r_{CE})^t} + \left(\frac{\text{FCFE}_{n+1}}{r_{CE}-g} \times \frac{1}{(1+r_{CE})^n} \right) \\ &= \frac{\$180(1+0.20)}{(1+0.12)^1} + \frac{180(1+0.20)^2}{(1+0.12)^2} + \frac{\$180(1+0.20)^3}{(1+0.12)^3} \\ &\quad + \left(\frac{[180(1+0.20)^3](1+0.04)}{0.12-0.04} \times \frac{1}{(1+0.12)^3} \right) \\ &= 192.86 + 206.63 + 221.39 + \frac{4{,}043.52}{(1.12)^3} \\ &\quad \$3{,}498.98 \end{aligned}$$

Rationale
$3,499 million.
Balboa's value of common equity is:

$$\begin{aligned} V_{CE} &= \sum_{t=1}^{n} \frac{\text{FCFE}_t}{(1+r_{CE})^t} + \left(\frac{\text{FCFE}_{n+1}}{r_{CE}-g} \times \frac{1}{(1+r_{CE})^n} \right) \\ &= \frac{\$180(1+0.20)}{(1+0.12)^1} + \frac{180(1+0.20)^2}{(1+0.12)^2} + \frac{\$180(1+0.20)^3}{(1+0.12)^3} \\ &\quad + \left(\frac{[180(1+0.20)^3](1+0.04)}{0.12-0.04} \times \frac{1}{(1+0.12)^3} \right) \\ &= 192.86 + 206.63 + 221.39 + \frac{4{,}043.52}{(1.12)^3} \\ &\quad \$3{,}498.98 \end{aligned}$$

Rationale

$3,738 million.

Balboa's value of common equity is:

$$
\begin{aligned}
V_{CE} &= \sum_{t=1}^{n} \frac{\text{FCFE}_t}{(1+r_{CE})^t} + \left(\frac{\text{FCFE}_{n+1}}{r_{CE}-g} \times \frac{1}{(1+r_{CE})^n} \right) \\
&= \frac{\$180(1+0.20)}{(1+0.12)^1} + \frac{180(1+0.20)^2}{(1+0.12)^2} + \frac{\$180(1+0.20)^3}{(1+0.12)^3} \\
&\quad + \left(\frac{[180(1+0.20)^3](1+0.04)}{0.12-0.04} \times \frac{1}{(1+0.12)^3} \right) \\
&= 192.86 + 206.63 + 221.39 + \frac{4{,}043.52}{(1.12)^3} \\
&\quad \$3{,}498.98
\end{aligned}
$$

Question 48
L2R35TB-AC031-1512
LOS: LOS-8420
Lesson Reference: Lesson 2: Forecasting Free Cash Flow
Difficulty: medium
Which of the following is correct with regard to FCFE?

- ○ Dividends will decrease FCFE.
- ○ Common share repurchases will decrease FCFE.
- ◉ Neither dividends nor common share repurchases will decrease FCFE.

Rationale
✗ **Dividends will decrease FCFE.**
Dividends, common share repurchases, and new common share issuance are absent from the calculation of FCFE. Thus, there is no effect on FCFE from any of these actions.

Rationale
✗ **Common share repurchases will decrease FCFE.**
Dividends, common share repurchases, and new common share issuance are absent from the calculation of FCFE. Thus, there is no effect on FCFE from any of these actions.

Rationale
✓ **Neither dividends nor common share repurchases will decrease FCFE.**
Dividends, common share repurchases, and new common share issuance are absent from the calculation of FCFE. Thus, there is no effect on FCFE from any of these actions.

Question 49
L2R35TB-AC024-1512
LOS: LOS-8420
Lesson Reference: Lesson 2: Forecasting Free Cash Flow
Difficulty: medium
Bannamore Corp. has recently used fluctuating debt levels to estimate an optimal capital mix. An analyst with FCFE, FCFF, and EBIT historical data would *most likely* value the company's equity starting with:

- ○ FCFE.
- ◉ FCFF.
- ○ EBIT.

Rationale
✗ **FCFE.**
The analyst will most likely use FCFF, and then subtract the market value of debt from that present value calculation. When debt levels are fluctuating, FCFE, which adds net new borrowing (Δd), will be highly volatile and may not be representative of future levels. Using EBIT will require a substantial amount of additional analysis not required by FCFF.

Rationale
✓ **FCFF.**
The analyst will most likely use FCFF, and then subtract the market value of debt from that present value calculation. When debt levels are fluctuating, FCFE, which adds net new borrowing (Δd), will be highly volatile and may not be representative of future levels. Using EBIT will require a substantial amount of additional analysis not required by FCFF.

Rationale
✗ **EBIT.**
The analyst will most likely use FCFF, and then subtract the market value of debt from that present value calculation. When debt levels are fluctuating, FCFE, which adds net new borrowing (Δd), will be highly volatile and may not be representative of future levels. Using EBIT will require a substantial amount of additional analysis not required by FCFF.

Question 50
L2R35TB-AC014-1512
LOS: LOS-8400
Lesson Reference: Lesson 2: Forecasting Free Cash Flow
Difficulty: medium

Rest Manufacturing Company (RMC) has been well managed and earns a 10 percent net profit margin. An analyst following the company's stock has forecast the company's sales for 2015 and calculated the relationships of the firm's internal financials to sales ($ in millions):

Sales	$8,800.0	Up 10 percent
Incremental FCI (FCI – Dep)	240.0	30 percent of sales increase
Depreciation	120.4	The only non-cash charge (NCC)
Change in working capital	100.0	12.5 percent of sales increase
Net borrowing	136.0	40 percent of WCI and incremental FCI

Using only this information as the starting point, the analyst's forecast 2015 FCFE will be *closest* to:

- $864 million.
- $744 million.
- $676 million.

Rationale
$864 million.

First, calculate net income as the starting point for the FCFE calculation:

$$\text{NI} = \text{Sales} \times \text{Net profit margin} = \$\,8{,}800\,\text{million} \times 0.10 = \$\,880$$

Next, calculate FCFE based on the net income calculation and remaining information:

$$\begin{aligned} \text{FCFE} &= \text{NI} - (1 - \text{DR})\text{WCI} - (1 - \text{DR})(\text{FCI} - \text{Dep}) \\ &= \$880 - (1 - 0.40)\$100 - (1 - 0.40)(\$240) = \underline{\$676\,\text{million}} \end{aligned}$$

Note that net borrowing includes borrowing to fund both WCI and incremental FCI.

Rationale
$744 million.

First, calculate net income as the starting point for the FCFE calculation:

$$\text{NI} = \text{Sales} \times \text{Net profit margin} = \$\,8{,}800\,\text{million} \times 0.10 = \$\,880$$

Next, calculate FCFE based on the net income calculation and remaining information:

$$\begin{aligned} \text{FCFE} &= \text{NI} - (1 - \text{DR})\text{WCI} - (1 - \text{DR})(\text{FCI} - \text{Dep}) \\ &= \$880 - (1 - 0.40)\$100 - (1 - 0.40)(\$240) = \underline{\$676\ \text{million}} \end{aligned}$$

Note that net borrowing includes borrowing to fund both WCI and incremental FCI.

Rationale

$676 million.

First, calculate net income as the starting point for the FCFE calculation:

$$\text{NI} = \text{Sales} \times \text{Net profit margin} = \$\,8{,}800\,\text{million} \times 0.10 = \$\,880$$

Next, calculate FCFE based on the net income calculation and remaining information:

$$\begin{aligned} \text{FCFE} &= \text{NI} - (1 - \text{DR})\text{WCI} - (1 - \text{DR})(\text{FCI} - \text{Dep}) \\ &= \$880 - (1 - 0.40)\$100 - (1 - 0.40)(\$240) = \underline{\$676\ \text{million}} \end{aligned}$$

Note that net borrowing includes borrowing to fund both WCI and incremental FCI.

Question 51
L2R35TB-AC039-1512
LOS: LOS-8450
Lesson Reference: Lesson 3: Free Cash Flow Model Variations
Difficulty: medium

Amana Fixtures, Inc. has normalized FCFE of 235 million Mexican pesos (MXN). The long-term real growth rate for Mexico is expected to be 4.0 percent with Amana's equity growing at about 1 percent above that rate as they expand internationally. Required returns and adjustments in percentages are:

Real country r_{CE}	7.25
Industry adjustment	0.70
Company size	0.43
Company debt	(0.25)

The value of Amana's equity is *closest to*:

- 5,920 million MXN.
- 7,510 million MXN.
- 7,880 million MXN.

Rationale
5,920 million MXN.

Adjusted r_{CE} is:

Real country r_{CE}	7.25
Industry adjustment	0.70
Company size	0.43
Company debt	(0.25)
Adj r_{CE}	8.13

The value of Amana's equity is:

$$V_{CE} = \frac{\text{FCFE}_t}{r_{CE} - g} = \frac{235[1 + (0.04 + 0.01)]}{0.0813 - 0.050} = \frac{246.75}{0.0313} = \underline{\text{MXN } 7{,}883 \text{ million}}$$

Rationale
7,510 million MXN.

Adjusted r_{CE} is:

Real country r_{CE}	7.25
Industry adjustment	0.70
Company size	0.43
Company debt	(0.25)
Adj r_{CE}	8.13

The value of Amana's equity is:

$$V_{CE} = \frac{\text{FCFE}_t}{r_{CE} - g} = \frac{235[1 + (0.04 + 0.01)]}{0.0813 - 0.050} = \frac{246.75}{0.0313} = \underline{\text{MXN } 7{,}883 \text{ million}}$$

Rationale

7,880 million MXN.

Adjusted r_{CE} is:

Real country r_{CE}	7.25
Industry adjustment	0.70
Company size	0.43
Company debt	(0.25)
Adj r_{CE}	8.13

The value of Amana's equity is:

$$V_{CE} = \frac{\text{FCFE}_t}{r_{CE} - g} = \frac{235[1 + (0.04 + 0.01)]}{0.0813 - 0.050} = \frac{246.75}{0.0313} = \underline{\text{MXN } 7{,}883 \text{ million}}$$

Question 52
L2R35TB-AC037-1512
LOS: LOS-8440
Lesson Reference: Lesson 3: Free Cash Flow Model Variations
Difficulty: medium
Virtue Airlines expects growth in the future to be no greater than world GDP growth of 3.4% as it expands its air routes to developing parts of the world. It does expect the current low valuation of its shares based on required returns to equity of 10 percent to increase based on more normal required returns of 9 percent next year as the global economy stabilizes and remains there for the foreseeable future. Debt will remain a constant percentage of working capital investment and fixed capital investment. Based on this information, an analyst forecasting the value of Virtue Airlines to equity capital providers would *most likely* calculate a valuation based on a:

- two-stage FCFE model.
- single-stage constant growth FCFE model.
- single-stage constant growth FCFF model and subtract out debt.

Rationale

two-stage FCFE model.

The formula for the single-stage constant growth FCFE model is:

$$V_{CE} = \frac{\text{FCFE}_1}{r_{CE} - g}$$

Based on the information, this model will be most appropriate. The FCFF valuation model with a subtraction for debt would be more appropriate if the company had unstable or negative FCFE.

Rationale

single-stage constant growth FCFE model.

The formula for the single-stage constant growth FCFE model is:

$$V_{CE} = \frac{\text{FCFE}_1}{r_{CE} - g}$$

Based on the information, this model will be most appropriate. The FCFF valuation model with a subtraction for debt would be more appropriate if the company had unstable or negative FCFE.

Rationale

single-stage constant growth FCFF model and subtract out debt.

The formula for the single-stage constant growth FCFE model is:

$$V_{CE} = \frac{\text{FCFE}_1}{r_{CE} - g}$$

Based on the information, this model will be most appropriate. The FCFF valuation model with a subtraction for debt would be more appropriate if the company had unstable or negative FCFE.

Question 53
L2R35TB-AC016-1512
LOS: LOS-8450
Lesson Reference: Lesson 3: Free Cash Flow Model Variations
Difficulty: medium

Anujit Pattaya has assembled the following valuation data for Malaysia Corp. (MYR 000):

Firm value to all capital suppliers	30,000
Market value of debt	14,218
Debt – required return	0.08
Equity – required return	0.14
Debt ratio	50 percent
Common shares outstanding	1.5 million

Based on this information, the value of a common share of Malaysia Corp. will be *closest to*:

- (●) MYR 10.50
- ( ) MYR 10.90
- ( ) MYR 11.30

Rationale
MYR 10.50
Value of common equity (V_{CE}) is simply firm value (V_F) less the market value of debt (d). Then the value of the common equity can be divided by the common shares outstanding to calculate a price per share of common equity.

$$P_c = \frac{V_F - d}{\text{CSO}} = \frac{\text{MYR } 30{,}000{,}000 - \text{MYR } 14{,}218{,}000}{1{,}500{,}000} = \underline{\text{MYR } 10.52}$$

Rationale
MYR 10.90
Value of common equity (V_{CE}) is simply firm value (V_F) less the market value of debt (d). Then the value of the common equity can be divided by the common shares outstanding to calculate a price per share of common equity.

$$P_c = \frac{V_F - d}{\text{CSO}} = \frac{\text{MYR } 30{,}000{,}000 - \text{MYR } 14{,}218{,}000}{1{,}500{,}000} = \underline{\text{MYR } 10.52}$$

Rationale

MYR 11.30

Value of common equity (V_{CE}) is simply firm value (V_F) less the market value of debt (d). Then the value of the common equity can be divided by the common shares outstanding to calculate a price per share of common equity.

$$P_c = \frac{V_F - d}{\text{CSO}} = \frac{\text{MYR } 30{,}000{,}000 - \text{MYR } 14{,}218{,}000}{1{,}500{,}000} = \underline{\text{MYR } 10.52}$$

Question 54
L2R35TB-AC027-1512
LOS: LOS-8380
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium
Which of the following would an analyst seeking to calculate free cash flows to all capital providers (FCFF) *most likely* subtract from an analysis starting with cash flow from operations (CFO)?

- (●) Fixed capital investment (FCI).
- ( ) Working capital investment (WCI).
- ( ) The tax shield from depreciation (Dep × t).

Rationale
✔ **Fixed capital investment (FCI).**
The analyst must subtract FCI and add the unshielded interest cost back to CFO in order to find FCFF. WCI and the depreciation tax shield have already been properly considered in calculating CFO.

Rationale
✘ **Working capital investment (WCI).**
The analyst must subtract FCI and add the unshielded interest cost back to CFO in order to find FCFF. WCI and the depreciation tax shield have already been properly considered in calculating CFO.

Rationale
✘ **The tax shield from depreciation (Dep × t).**
The analyst must subtract FCI and add the unshielded interest cost back to CFO in order to find FCFF. WCI and the depreciation tax shield have already been properly considered in calculating CFO.

Question 55
L2R35TB-AC010-1512
LOS: LOS-8390
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium

Big Machines, Inc. had the following data in 2012 (currency in millions):

Earnings before interest, taxes, depreciation and amortization (EBITDA)	$11,386
Depreciation expense	2,813
Interest expense	467
Income taxes	2,529
Net income	5,577
Total non-cash charges	2,813
Working capital investment	3,683
Cash flow from operations	4,707
Fixed capital investment	3,350
Change in debt	4,916

FCFF will be *closest to*:

- $994 million.
- $1,495 million.
- $1,678 million.

Rationale
$994 million.

First, determine the tax rate, which is tax expense as a percentage of earnings before taxes:

$$\text{Tax rate} = \frac{\text{Tax expense}}{\text{Earnings before taxes}} = \frac{\$2{,}529}{\$11{,}3862{,}813467} = 31.2\%$$

Next, find the FCFF using each possible starting point:

$$
\begin{aligned}
\text{FCFF} &= \text{EBITDA}(1-t) + \text{Dep}(t) - \text{WCI-FCI} \\
&= 11{,}386(1-0.312) + 2{,}813(0.312) - 3{,}683 - 3{,}350 = \underline{1{,}678}
\end{aligned}
$$

$$
\begin{aligned}
&= \text{EBIT}(1-t) + \text{Dep-WCI-FCI} \\
&= (11{,}386 - 2{,}813)(1-0.312) + 2{,}813 - 3{,}683 - 3{,}350 = \underline{1{,}678}
\end{aligned}
$$

$$
\begin{aligned}
&= \text{NI} + \text{NCC-WCI} + \text{I}(1-t) - \text{FCI} \\
&= 5{,}577 + 2{,}813 - 3{,}683 + 467(1-0.312) - 3{,}350 = \underline{1{,}678}
\end{aligned}
$$

$$
\begin{aligned}
&= \text{CFO} + \text{I}(1-t) - \text{WCI} \\
&= 4{,}707 + 467(1-0.312) - 3{,}350 = \underline{1{,}678}
\end{aligned}
$$

Rationale

$1,495 million.

First, determine the tax rate, which is tax expense as a percentage of earnings before taxes:

$$\text{Tax rate} = \frac{\text{Tax expense}}{\text{Earnings before taxes}} = \frac{\$2{,}529}{\$11{,}3862{,}813467} = 31.2\%$$

Next, find the FCFF using each possible starting point:

$$
\begin{aligned}
\text{FCFF} &= \text{EBITDA}(1-t) + \text{Dep}(t) - \text{WCI-FCI} \\
&= 11{,}386(1-0.312) + 2{,}813(0.312) - 3{,}683 - 3{,}350 = \underline{1{,}678}
\end{aligned}
$$

$$
\begin{aligned}
&= \text{EBIT}(1-t) + \text{Dep-WCI-FCI} \\
&= (11{,}386 - 2{,}813)(1-0.312) + 2{,}813 - 3{,}683 - 3{,}350 = \underline{1{,}678}
\end{aligned}
$$

$$
\begin{aligned}
&= \text{NI} + \text{NCC-WCI} + \text{I}(1-t) - \text{FCI} \\
&= 5{,}577 + 2{,}813 - 3{,}683 + 467(1-0.312) - 3{,}350 = \underline{1{,}678}
\end{aligned}
$$

$$
\begin{aligned}
&= \text{CFO} + \text{I}(1-t) - \text{WCI} \\
&= 4{,}707 + 467(1-0.312) - 3{,}350 = \underline{1{,}678}
\end{aligned}
$$

Rationale

$1,678 million.

First, determine the tax rate, which is tax expense as a percentage of earnings before taxes:

$$\text{Tax rate} = \frac{\text{Tax expense}}{\text{Earnings before taxes}} = \frac{\$2{,}529}{\$11{,}3862{,}813467} = 31.2\%$$

Next, find the FCFF using each possible starting point:

$$\begin{aligned}
\text{FCFF} &= \text{EBITDA}(1-t) + \text{Dep}(t) - \text{WCI-FCI} \\
&= 11{,}386(1-0.312) + 2{,}813(0.312) - 3{,}683 - 3{,}350 = \underline{1{,}678}
\end{aligned}$$

$$\begin{aligned}
&= \text{EBIT}(1-t) + \text{Dep-WCI-FCI} \\
&= (11{,}386 - 2{,}813)(1-0.312) + 2{,}813 - 3{,}683 - 3{,}350 = \underline{1{,}678}
\end{aligned}$$

$$\begin{aligned}
&= \text{NI} + \text{NCC-WCI} + \text{I}(1-t) - \text{FCI} \\
&= 5{,}577 + 2{,}813 - 3{,}683 + 467(1-0.312) - 3{,}350 = \underline{1{,}678}
\end{aligned}$$

$$\begin{aligned}
&= \text{CFO} + \text{I}(1-t) - \text{WCI} \\
&= 4{,}707 + 467(1-0.312) - 3{,}350 = \underline{1{,}678}
\end{aligned}$$

Question 56
L2EQ-PQ3405-1411
LOS: LOS-8380
LOS: LOS-8390
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium

Selected information regarding Beta Ltd. is given below:

Cash flow from operations = $1,822,970

Depreciation = 177,370

Interest expense = $148,375

Fixed capital investment = $451,620

Working capital investment = $237,280

Net borrowing = $328,150

Given a tax rate of 40%, free cash flow to the firm is *closest to*:

- $1,637,745
- $1,371,375
- $1,460,375

Rationale

This Answer is Correct

FCFF = CFO + Int (1 − Tax rate) − FCInv

FCFF = 1,822,970 + [148,375 × (1 − 0.4)] − 451,620

FCFF = $1,460,375

Question 57
L2R35TB-AC025-1512
LOS: LOS-8360
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium
An appropriate alternative to valuing a firm with zero FCFE would be:

- ignoring fixed capital expenditures if the firm cash flows will then become positive.
- adding back the charges taken to net income for non-depreciation, non-cash charges.
- using FCFF and, as the value grows past the point of paying debt capital providers, set aside the balance for equity capital providers.

Rationale
✗ **ignoring fixed capital expenditures if the firm cash flows will then become positive.**
Free cash flow to the firm (FCFF) includes returns to all capital providers. Once FCFF has surpassed the capital return needed for debt capital providers, the remainder could be used as returns to equity capital providers.

Rationale
✗ **adding back the charges taken to net income for non-depreciation, non-cash charges.**
Free cash flow to the firm (FCFF) includes returns to all capital providers. Once FCFF has surpassed the capital return needed for debt capital providers, the remainder could be used as returns to equity capital providers.

Rationale
✓ **using FCFF and, as the value grows past the point of paying debt capital providers, set aside the balance for equity capital providers.**
Free cash flow to the firm (FCFF) includes returns to all capital providers. Once FCFF has surpassed the capital return needed for debt capital providers, the remainder could be used as returns to equity capital providers.

Question 58
L2R35TB-AC030-1512
LOS: LOS-8420
Lesson Reference: Lesson 2: Forecasting Free Cash Flow
Difficulty: medium
Alpha Company has voted to issue a dividend to common equity shareholders. This dividend will *most likely*:

- reduce calculated FCFF.
- increase calculated FCFF.
- have no effect on calculated FCFF.

Rationale
reduce calculated FCFF.
Common dividends and share repurchases do not have any effect on the calculation of FCFF, as none of the FCFF formulas include common dividends or share repurchases.

Rationale
increase calculated FCFF.
Common dividends and share repurchases do not have any effect on the calculation of FCFF, as none of the FCFF formulas include common dividends or share repurchases.

Rationale
have no effect on calculated FCFF.
Common dividends and share repurchases do not have any effect on the calculation of FCFF, as none of the FCFF formulas include common dividends or share repurchases.

Question 59
L2EQ-TB0021-1412
LOS: LOS-8360
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium
In which of the following scenarios would an analyst *most likely* prefer to use valuation based on free cash flow to equity (FCFE) rather than free cash flow to the firm (FCFF)? When the company being valued has:

- ○ High levels of leverage.
- ○ A volatile capital structure.
- ◉ Low levels of capital expenditure.

Rationale

This Answer is Correct

FCFF will be preferred when a company has high levels of leverage since the company may have negative FCFE. FCFF would also be preferred to FCFE when the company has a changing capital structure since FCFE will be affected by fluctuating levels of net borrowing.

Question 60
L2R35TB-AC023-1512
LOS: LOS-8410
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium
Which of the following would an analyst be *most likely* to use in both dividend discount models (DDMs) and free cash flow to equity (FCFE) models?

- (●) Required return on equity (r_{CE}).
- ( ) Weighted average cost of capital (WACC).
- ( ) Weighted average cost of capital (WACC) adjusted for preferred debt costs (r_p).

Rationale
✓ **Required return on equity (r_{CE}).**

Required return on equity is used to discount dividends in the DDM and free cash flows to equity in the FCFE model.

The P/E ratio based on forecast EPS for the NTM will be 14.7 (45.00/3.06).

Rationale
✗ **Weighted average cost of capital (WACC).**

Required return on equity is used to discount dividends in the DDM and free cash flows to equity in the FCFE model.

The P/E ratio based on forecast EPS for the NTM will be 14.7 (45.00/3.06).

Rationale
✗ **Weighted average cost of capital (WACC) adjusted for preferred debt costs (r_p).**

Required return on equity is used to discount dividends in the DDM and free cash flows to equity in the FCFE model.

The P/E ratio based on forecast EPS for the NTM will be 14.7 (45.00/3.06).

Question 61
L2R35TB-AC026-1512
LOS: LOS-8380
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium
An analyst adding interest net of tax benefits and preferred dividends back to net income to common would *most likely*:

- understate FCFE.
- understate FCFF.
- correctly state FCFF.

Rationale
understate FCFE.
Interest net of tax benefits and preferred dividends must be added to net income to common to derive FCFF. These have both been subtracted in calculating net income to common.

Rationale
understate FCFF.
Interest net of tax benefits and preferred dividends must be added to net income to common to derive FCFF. These have both been subtracted in calculating net income to common.

Rationale
correctly state FCFF.
Interest net of tax benefits and preferred dividends must be added to net income to common to derive FCFF. These have both been subtracted in calculating net income to common.

Question 62
L2EQ-PQ3401-1411
LOS: LOS-8380
LOS: LOS-8390
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium

An analyst gathered the following information regarding Alpha Ltd.:

Net income = $378,000

Interest expense = $15,575

Depreciation expense = $28,100

Restructuring charges = $11,250

Amortization of long-term bond premiums = $5,780

Fixed capital investment = $78,625

Working capital investment = $31,280

Net borrowing = $51,250

Given a tax rate of 40%, free cash flow to the firm is *closest to*:

- $322,570
- $307,895
- $311,010

Rationale

This Answer is Correct

FCFF = NI + NCC + Int (1 − Tax rate) − FCInv − WCInv

FCFF = 378,000 + (28,100 + 11,250 − 5,780) + [15,575 × (1 − 0.4)] − 78,625 − 31,280

FCFF = $311,010

Question 63
L2EQ-ITEMSET-PQ3412-1411
LOS: LOS-8390
LOS: LOS-8440
LOS: LOS-8450
Lesson Reference: Lesson 3: Free Cash Flow Model Variations
Difficulty: N/A

Use the following information to answer the next 2 questions:

An analyst gathered the following information regarding Diago Investments:

FCFF at the end of 2011 = $1.1 million
Interest expense = $525,000
Fixed capital expenditure = $650,000
Working capital expenditure = $280,000
Depreciation expense = $395,000
Net borrowing = $480,000
Number of common shares outstanding = 600,000
Weighted average cost of capital = 14%
Risk-free rate of return = 5%
Equity market risk premium = 7%
Beta of the company's stock = 1.1
Expected long-term growth rate in FCFE = 6%
Tax rate = 40%

i.
FCFE per share at the end of 2011 is *closest to*:

- $2.99
- (●) $2.11
- $3.82

Rationale
This Answer is Correct

FCFE = FCFF − Interest (1 − Tax rate) + Net borrowing

FCFE = 1,100,000 − [525,000 (1 − 0.4)] + 480,000 = $1,265,000

FCFE per share = $1,265,000 / 600,000 = $2.1083

ii.
The value per share of the company's stock at the end of 2011 is *closest to*:

- (●) $33.36
- $27.93

○ $31.47

Rationale

This Answer is Correct

Required rate of return on equity = 0.05 + (0.07 × 1.1) = 12.70%

Value of equity at the end of 2011 = FCFE 2012 / (r − g)

Value of equity at the end of 2011 = (2.1083 × 1.06) / (0.1270 − 0.06) = $33.36 per share

Question 64
L2EQ-PQ3406-1411
LOS: LOS-8380
LOS: LOS-8390
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium

Selected information regarding Sentino Investments is given below. Assume that this is the company's first year of operations.

Earnings before interest and tax = $548,950

Interest expense = $115,250

Capital expenditures = $1,150,285

Proceeds from sale of long-term assets = $790,390

Depreciation expense = $280,355

Current assets (excluding cash) = $595,650

Current liabilities (excluding short-term debt) = $291,250

Given a tax rate of 40%, free cash flow to the firm is *closest to*:

- $165,010
- −$54,570
- −$222,963

Rationale

This Answer is Correct

FCFF = EBIT (1 − Tax rate) + Depreciation − FCInv − WCInv

FCInv = 1,150,285 − 790,390 = $359,895

WCInv = 595,650 − 291,250 = $304,400

FCFF = [548,950 (1 − 0.4)] + 280,355 − 359,895 − 304,400

FCFF = −$54,570

Question 65
L2EQ-PQ3417-1411
LOS: LOS-8360
Lesson Reference: Lesson 1: FCFF and FCFE Valuation Approaches
Difficulty: medium
In which of the following situations would an analyst *most* likely prefer using the FCFE approach over the FCFF approach to valuing a company?

- (●) When the company's capital structure is relatively stable.
- ( ) When the company is leveraged and its capital structure is changing.
- ( ) When the company is leveraged and FCFE is negative.

Rationale

This Answer is Correct
The FCFE approach would be preferred when the company's capital structure is relatively stable.