

# SS 10 Corporate Finance: Corporate Governance, Capital Budgeting, and Cost of Capital

## Answers

### Question #1 of 165

Question ID: 434330

A company has the following data associated with it:

- A target capital structure of 10% preferred stock, 50% common equity and 40% debt.
- Outstanding 20-year annual pay 6% coupon bonds selling for \$894.
- Common stock selling for \$45 per share that is expected to grow at 8% and expected to pay a \$2 dividend one year from today.
- Their \$100 par preferred stock currently sells for \$90 and is earning 5%.
- The company's tax rate is 40%.

What is the after-tax cost of debt capital and after-tax cost of preferred stock?

<u>Debt capital</u>	<u>Preferred stock</u>
X A) 4.5%	3.3%
✓ B) 4.2%	5.6%
X C) 4.2%	3.3%

#### Explanation

Debt:

$N = 20$ ;  $FV = 1,000$ ;  $PMT = 60$ ;  $PV = -894$ ;  $CPT\ I/Y = 7\%$

$k_d = (7\%)(1 - 0.4) = 4.2\%$

Preferred stock:

$k_{ps} = D_{ps} / P = 5 / 90 = 5.56\%$

Note that the cost of preferred stock is not adjusted for taxes because preferred dividends are usually not tax-deductible.

#### References

**Question From:** Session 10 > Reading 36 > LOS g

**Related Material:**

- Key Concepts by LOS

### Question #2 of 165

Question ID: 683889

Which of the following environmental factors is *least likely* to arise from inadequate internal controls and safety standards?

- ✓ A) Stranded assets.
- X B) Local resource depletion.

X **C)** Waste contamination.

#### Explanation

In the context of ESG factors, stranded assets refer to carbon resources that become uneconomic because of outside forces such as changes in regulation.

#### References

**Question From:** Session 10 > Reading 34 > LOS k

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #3 of 165**

Question ID: 414785

The expected dividend one year from today is \$2.50 for a share of stock priced at \$22.50. The long-term growth in dividends is projected at 8%. The cost of common equity is *closest* to:

- X **A)** 18.0%.
- ✓ **B)** 19.1%.
- X **C)** 15.6%.

#### Explanation

$$K_{ce} = (D_1 / P_0) + g$$

$$K_{ce} = [2.50 / 22.50] + 0.08 = 0.19111, \text{ or } 19.1\%$$

#### References

**Question From:** Session 10 > Reading 36 > LOS h

#### **Related Material:**

- Key Concepts by LOS
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### **Question #4 of 165**

Question ID: 414737

Which of the following statements about the internal rate of return (IRR) for a project with the following cash flow pattern is CORRECT?

- Year 0: -\$ 2,000
- Year 1: \$10,000
- Year 2: -\$ 10,000

- X **A)** It has a single IRR of approximately 38%.
- X **B)** No IRRs can be calculated.

✓ **C)** It has two IRRs of approximately 38% and 260%.

#### Explanation

The number of IRRs equals the number of changes in the sign of the cash flow. In this case, from negative to positive and then back to negative. Although 38% seems appropriate, one should not automatically discount the value of 260%.

Check answers by calculation:

$$10,000 \div 1.38 - 10,000 \div 1.38^2 = 1995.38$$

And:

$$10,000 \div 3.6 - 10,000 \div 3.6^2 = 2006.17$$

Both discount rates give NPVs of approximately zero and thus, are IRRs.

#### References

**Question From:** Session 10 > Reading 35 > LOS e

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #5 of 165**

Question ID: 683887

To judge whether management's incentives are aligned with a firm's stated goals, an analyst should examine the firm's:

- X **A)** share class structure.
- ✓ **B)** remuneration programs.
- X **C)** cross-shareholdings.

#### Explanation

Disclosures of a firm's remuneration programs enable an analyst to judge whether its compensation structure aligns management's incentives with the firm's objectives and shareholders' interests.

#### References

**Question From:** Session 10 > Reading 34 > LOS i

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #6 of 165**

Question ID: 467819

The 6% semiannual coupon, 7-year notes of Woodbine Transportation, Inc. trade for a price of 94.54. What is the company's after-tax cost of debt capital if its marginal tax rate is 30%?

- ✓ **A)** 4.9%.
- X **B)** 2.1%.
- X **C)** 4.2%.

#### Explanation

To determine Woodbine's before-tax cost of debt, find the yield to maturity on its outstanding notes:

$$PV = -94.54; FV = 100; PMT = 6 / 2 = 3; N = 14; CPT \rightarrow I/Y = 3.50 \times 2 = 7\%$$

Woodbine's after-tax cost of debt is  $k_d(1 - t) = 7\%(1 - 0.3) = 4.9\%$

#### References

**Question From:** Session 10 > Reading 36 > LOS f

#### **Related Material:**

- Key Concepts by LOS

## **Question #7 of 165**

Question ID: 434325

An analyst has gathered the following data about a company with a 12% cost of capital:

	<i>Project P</i>	<i>Project Q</i>
Cost	\$15,000	\$25,000
Life	5 years	5 years
Cash inflows	\$5,000/year	\$7,500/year

If Projects P and Q are mutually exclusive, what should the company do?

- X **A)** Accept Project Q and reject Project P.
- X **B)** Reject both Project P and Project Q.
- ✓ **C)** Accept Project P and reject Project Q.

#### Explanation

Project P:

$$N = 5; PMT = 5,000; FV = 0; I/Y = 12; CPT PV = 18,024$$

$$NPV \text{ for Project A} = 18,024 - 15,000 = 3,024.$$

Project Q:

$$N = 5; PMT = 7,500; FV = 0; I/Y = 12; CPT PV = 27,036$$

$$NPV \text{ for Project B} = 27,036 - 25,000 = 2,036.$$

For mutually exclusive projects, accept the project with the highest positive NPV. In this example the NPV for Project P (3,024) is higher than the NPV of Project Q (2,036). Therefore accept Project P.

#### References

**Question From:** Session 10 > Reading 35 > LOS d

**Related Material:**

- Key Concepts by LOS
- 

**Question #8 of 165**

Question ID: 598675

A company has the following data associated with it:

- A target capital structure of 10% preferred stock, 50% common equity and 40% debt.
- Outstanding 20-year annual pay 6% coupon bonds selling for \$894.
- Common stock selling for \$45 per share that is expected to grow at 8% and expected to pay a \$2 dividend one year from today.
- Their 5%, \$100 par preferred stock currently sells for \$90.
- The company's tax rate is 40%.

What is the weighted average cost of capital (WACC)?

- ✓ **A) 8.5%.**
- X **B) 10.3%.**
- X **C) 9.2%.**

Explanation

After-tax cost of debt:

$N = 20$ ;  $FV = 1,000$ ;  $PMT = 60$ ;  $PV = -894$ ;  $CPT\ I/Y = 7\%$

$k_d = (7\%)(1 - 0.4) = 4.2\%$

Cost of preferred stock:

$k_{ps} = D_{ps} / P = 5 / 90 = 5.56\%$

Cost of common equity:

$k_{ce} = (D_1 / P_0) + g$

$k_{ce} = 2 / 45 + 0.08 = 0.1244 = 12.44\%$

$WACC = (0.4)(4.2) + (0.1)(5.6) + (0.5)(12.4) = 8.5\%$

References

**Question From:** Session 10 > Reading 36 > LOS a

**Related Material:**

- Key Concepts by LOS
- 

**Question #9 of 165**

Question ID: 414791

Julius, Inc., is in a 40% marginal tax bracket. The firm can raise as much capital as needed in the bond market at a cost of 10%.

The preferred stock has a fixed dividend of \$4.00. The price of preferred stock is \$31.50. The after-tax costs of debt and preferred stock are *closest* to:

	<u>Debt</u>	<u>Preferred stock</u>
X <b>A)</b>	6.0%	7.6%
X <b>B)</b>	10.0%	7.6%
✓ <b>C)</b>	6.0%	12.7%

#### Explanation

After-tax cost of debt =  $10\% \times (1 - 0.4) = 6\%$ .

Cost of preferred stock =  $\$4 / \$31.50 = 12.7\%$ .

#### References

**Question From:** Session 10 > Reading 36 > LOS h

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #10 of 165**

Question ID: 414726

Which of the following statements about NPV and IRR is NOT correct?

- ✓ **A)** The NPV will be positive if the IRR is less than the cost of capital.
- X **B)** The IRR can be positive even if the NPV is negative.
- X **C)** When the IRR is equal to the cost of capital, the NPV equals zero.

#### Explanation

This statement should read, "The NPV will be positive if the IRR is *greater than* the cost of capital. The other statements are correct. The IRR can be positive ( $>0$ ), but less than the cost of capital, thus resulting in a negative NPV. One definition of the IRR is the rate of return for which the NPV of a project is zero.

#### References

**Question From:** Session 10 > Reading 35 > LOS e

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #11 of 165**

Question ID: 414751

When calculating the weighted average cost of capital (WACC) an adjustment is made for taxes because:

- X **A)** equity is risky.
- ✓ **B)** the interest on debt is tax deductible.
- X **C)** equity earns higher return than debt.

#### Explanation

Equity and preferred stock are not adjusted for taxes because dividends are not deductible for corporate taxes. Only interest expense is deductible for corporate taxes.

#### References

**Question From:** Session 10 > Reading 36 > LOS a

#### **Related Material:**

- Key Concepts by LOS

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### **Question #12 of 165**

Question ID: 485786

An analyst gathered the following information for ABC Company, which has a target capital structure of 70% common equity and 30% debt:

Dividend yield	3.50%
Expected market return	9.00%
Risk-free rate	4.00%
Tax rate	40%
Beta	0.90
Bond yield-to-maturity	8.00%

ABC's weighted-average cost of capital is *closest to*:

- X **A)** 6.9%.
- ✓ **B)** 7.4%.
- X **C)** 8.4%.

#### Explanation

The problem must be solved in two steps. First, calculate the cost of equity:

$$\begin{aligned}r_{CE} &= R_f + \beta(R_M - R_f) \\&= 0.04 + 0.9(0.09 - 0.04) \\&= 0.085 = 8.5\%\end{aligned}$$

Next, calculate the WACC.

$$\begin{aligned}\text{WACC} &= w_D r_D(1 - t) + w_P r_P + w_{CE} r_{CE} \\&= (0.30)(0.08)(1 - 0.40) + 0 + (0.70)(0.085) \\&= 0.0739 \text{ or } 7.39\%\end{aligned}$$

#### References

**Question From:** Session 10 > Reading 36 > LOS h

**Related Material:**

- Key Concepts by LOS
- 

**Question #13 of 165**

Question ID: 414767

Levenworth Industries has the following capital structure on December 31, 2006:

	Book Value	Market Value
Debt outstanding	\$8 million	\$10.5 million
Preferred stock outstanding	\$2 million	\$1.5 million
Common stock outstanding	\$10 million	\$13.7 million
Total capital	\$20 million	\$25.7 million

What is the firm's target debt and preferred stock portion of the capital structure based on existing capital structure?

	<u>Debt</u>	<u>Preferred Stock</u>
X <b>A)</b> 0.40	0.10	
X <b>B)</b> 0.41	0.10	
✓ <b>C)</b> 0.41	0.06	

Explanation

The weights in the calculation of WACC should be based on the firm's target capital structure, that is, the proportions (based on market values) of debt, preferred stock, and equity that the firm expects to achieve over time. Book values should not be used. As such, the weight of debt is 41% ( $\$10.5 \div \$25.7$ ), the weight of preferred stock is 6% ( $\$1.5 \div \$25.7$ ) and the weight of common stock is 53% ( $\$13.7 \div \$25.7$ ).

References

**Question From:** Session 10 > Reading 36 > LOS c

**Related Material:**

- Key Concepts by LOS
- 

**Question #14 of 165**

Question ID: 683886

Risks that may arise from ineffective corporate governance *least likely* include:

- ✓ **A)** reduced default risk.
- X **B)** less effective decision making.



X **C)** weaker financial performance.

#### Explanation

Ineffective corporate governance is likely to increase default risk.

#### References

**Question From:** Session 10 > Reading 34 > LOS h

#### **Related Material:**

- Key Concepts by LOS

### Question #15 of 165

Question ID: 414812

Meredith Suresh, an analyst with Torch Electric, is evaluating two capital projects. Project 1 has an initial cost of \$200,000 and is expected to produce cash flows of \$55,000 per year for the next eight years. Project 2 has an initial cost of \$100,000 and is expected to produce cash flows of \$40,000 per year for the next four years. Both projects should be financed at Torch's weighted average cost of capital. Torch's current stock price is \$40 per share, and next year's expected dividend is \$1.80. The firm's growth rate is 5%, the current tax rate is 30%, and the pre-tax cost of debt is 8%. Torch has a target capital structure of 50% equity and 50% debt. If Torch takes on either project, it will need to be financed with externally generated equity which has flotation costs of 4%.

Suresh is aware that there are two common methods for accounting for flotation costs. The first method, commonly used in textbooks, is to incorporate flotation costs directly into the cost of equity. The second, and more correct approach, is to subtract the dollar value of the flotation costs from the project NPV. If Suresh uses the cost of equity adjustment approach to account for flotation costs rather than the correct cash flow adjustment approach, will the NPV for each project be overstated or understated?

Project 1 NPV   Project 2 NPV

- X **A)** Understated   Overstated
- X **B)** Understated   Understated
- ✓ **C)** Overstated   Overstated

#### Explanation

The incorrect method of accounting for flotation costs spreads the flotation cost out over the life of the project by a fixed percentage that does not necessarily reflect the present value of the flotation costs. The impact on project evaluation depends on the length of the project and magnitude of the flotation costs, however, for most projects that are shorter, the incorrect method will overstate NPV, and that is exactly what we see in this problem.

*Correct method of accounting for flotation costs:*

After-tax cost of debt =  $8.0\% (1 - 0.30) = 5.60\%$

Cost of equity =  $(\$1.80 / \$40.00) + 0.05 = 0.045 + 0.05 = 9.50\%$

WACC =  $0.50(5.60\%) + 0.50(9.50\%) = 7.55\%$

Flotation costs Project 1 =  $\$200,000 \times 0.5 \times 0.04 = \$4,000$

Flotation costs Project 2 =  $\$100,000 \times 0.5 \times 0.04 = \$2,000$

NPV Project 1 =  $-\$200,000 - \$4,000 + (N = 8, I = 7.55\%, PMT = \$55,000, FV = 0 \rightarrow CPT PV = \$321,535) = \$117,535$

NPV Project 2 =  $-\$100,000 - \$2,000 + (N = 4, I = 7.55\%, PMT = \$40,000, FV = 0 \rightarrow CPT PV = \$133,823) = \$31,823$

*Incorrect Adjustment for cost of equity method for accounting for flotation costs:*

After-tax cost of debt =  $8.0\% (1 - 0.30) = 5.60\%$

Cost of equity =  $[\$1.80 / \$40.00(1 - 0.04)] + 0.05 = 0.0469 + 0.05 = 9.69\%$

WACC =  $0.50(5.60\%) + 0.50(9.69\%) = 7.65\%$

NPV Project 1 =  $-\$200,000 + (N = 8, I = 7.65\%, PMT = \$55,000, FV = 0 \rightarrow CPT PV = \$320,327) = \$120,327$

NPV Project 2 =  $-\$100,000 + (N = 4, I = 7.65\%, PMT = \$40,000, FV = 0 \rightarrow CPT PV = \$133,523) = \$33,523$

#### References

**Question From:** Session 10 > Reading 36 > LOS I

#### **Related Material:**

- Key Concepts by LOS
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### **Question #16 of 165**

Question ID: 414743

Polington Aircraft Co. just announced a sale of 30 aircraft to Cuba, a project with a net present value of \$10 million. Investors did not anticipate the sale because government approval to sell to Cuba had never before been granted. The share price of Polington should:

- ✓ **A)** increase by the project NPV divided by the number of common shares outstanding.
- X **B)** increase by the  $NPV \times (1 - \text{corporate tax rate})$  divided by the number of common shares outstanding.
- X **C)** not necessarily change because new contract announcements are made all the time.

#### Explanation

Since the sale was not anticipated by the market, the share price should rise by the NPV of the project per common share. NPV is already calculated using after-tax cash flows.

#### References

**Question From:** Session 10 > Reading 35 > LOS f

#### **Related Material:**

- Key Concepts by LOS
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### **Question #17 of 165**

Question ID: 460667

To finance a proposed project, Youngham Corporation would need to issue £25 million in common equity. Youngham would

receive £23 million in net proceeds from the equity issuance. When analyzing the project, analysts at Younghan should:

- ✓ **A)** add the £2 million flotation cost to the project's initial cash outflow.
- X **B)** increase the cost of equity capital to account for the 8% flotation cost.
- X **C)** not consider the flotation cost because it is a sunk cost.

#### Explanation

The recommended method is to treat flotation costs as a cash outflow at project initiation rather than as a component of the cost of equity.

#### References

**Question From:** Session 10 > Reading 36 > LOS I

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #18 of 165**

Question ID: 414768

The marginal cost of capital is:

- X **A)** equal to the firm's weighted cost of funds.
- X **B)** tied solely to the specific source of financing.
- ✓ **C)** the cost of the last dollar raised by the firm.

#### Explanation

The "marginal" cost refers to the last dollar of financing acquired by the firm assuming funds are raised in the same proportion as the target capital structure. It is a percentage value based on both the returns required by the last bondholders *and* stockholders to provide capital to the firm. Regardless of whether the funding came from bondholders or stockholders, both debt and equity are needed to fund projects.

#### References

**Question From:** Session 10 > Reading 36 > LOS d

#### **Related Material:**

- Key Concepts by LOS
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### **Question #19 of 165**

Question ID: 414703

Rosalie Woischke is an executive with ColaCo, a nationally known beverage company. Woischke is trying to determine the firm's optimal capital budget. First, Woischke is analyzing projects Sparkle and Fizz. She has determined that both Sparkle and Fizz are profitable and is planning on having ColaCo accept both projects. Woischke is particularly excited about Sparkle because if Sparkle is profitable over the next year, ColaCo will have the opportunity to decide whether or not to invest in a third project,

Bubble. Which of the following terms *best* describes the type of projects represented by Sparkle and Fizz as well as the opportunity to invest in Bubble?

Sparkle and Fizz

Opportunity to invest in Bubble

- |   |                    |
|---|--------------------|
| ✓ <b>A)</b> Independent projects        | Project sequencing |
| X <b>B)</b> Mutually exclusive projects | Project sequencing |
| X <b>C)</b> Independent projects        | Add-on project     |

Explanation

Independent projects are projects for which the cash flows are independent from one another and can be evaluated based on each project's individual profitability. Since Woischke is accepting both projects, the projects must be independent. If the projects were mutually exclusive, only one of the two projects could be accepted. The opportunity to invest in Bubble is a result of project sequencing, which means that investing in a project today creates the opportunity to decide to invest in a related project in the future.

References

**Question From:** Session 10 > Reading 35 > LOS c

**Related Material:**

- Key Concepts by LOS

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**Question #20 of 165**

Question ID: 414758

A firm has \$100 in equity and \$300 in debt. The firm recently issued bonds at the market required rate of 9%. The firm's beta is 1.125, the risk-free rate is 6%, and the expected return in the market is 14%. Assume the firm is at their optimal capital structure and the firm's tax rate is 40%. What is the firm's weighted average cost of capital (WACC)?

- X **A)** 5.4%.
- X **B)** 8.6%.
- ✓ **C)** 7.8%.

Explanation

$$\text{CAPM} = R_E = R_F + B(R_M - R_F) = 0.06 + (1.125)(0.14 - 0.06) = 0.15$$

$$\text{WACC} = (E \div V)(R_E) + (D \div V)(R_D)(1 - t)$$

$$V = 100 + 300 = 400$$

$$\text{WACC} = (1 \div 4)(0.15) + (3 \div 4)(0.09)(1 - 0.4) = 0.078$$

References

**Question From:** Session 10 > Reading 36 > LOS a

**Related Material:**

- Key Concepts by LOS
- 

### Question #21 of 165

Question ID: 414745

Assume a firm uses a constant WACC to select investment projects rather than adjusting the projects for risk. If so, the firm will tend to:

- ✓ **A)** reject profitable, low-risk projects and accept unprofitable, high-risk projects.
- X **B)** accept profitable, low-risk projects and reject unprofitable, high-risk projects.
- X **C)** accept profitable, low-risk projects and accept unprofitable, high-risk projects.

#### Explanation

The firm will reject profitable, low-risk projects because it will use a hurdle rate that is too high. The firm should lower the required rate of return for lower risk projects. The firm will accept unprofitable, high-risk projects because the hurdle rate of return used will be too low relative to the risk of the project. The firm should increase the required rate of return for high-risk projects.

#### References

**Question From:** Session 10 > Reading 36 > LOS a

#### **Related Material:**

- Key Concepts by LOS
- 

### Question #22 of 165

Question ID: 414727

The underlying cause of ranking conflicts between the net present value (NPV) and internal rate of return (IRR) methods is the underlying assumption related to the:

- X **A)** initial cost.
- X **B)** cash flow timing.
- ✓ **C)** reinvestment rate.

#### Explanation

The IRR method assumes all future cash flows can be reinvested at the IRR. This may not be feasible because the IRR is not based on market rates. The NPV method uses the weighted average cost of capital (WACC) as the appropriate discount rate.

#### References

**Question From:** Session 10 > Reading 35 > LOS e

#### **Related Material:**

- Key Concepts by LOS
-

## Question #23 of 165

Question ID: 414793

The following information applies to a corporation:

- The company has \$200 million of equity and \$100 million of debt.
- The company recently issued bonds at 9%.
- The corporate tax rate is 30%.
- The company's beta is 1.125.

If the risk-free rate is 6% and the expected return on the market portfolio is 14%, the company's after-tax weighted average cost of capital is *closest to*:

- ✓ **A) 12.1%.**
- X **B) 11.2%.**
- X **C) 10.5%.**

### Explanation

$$k_s = RFR + \beta(R_m - RFR)$$

$$= 6\% + 1.125(14\% - 6\%) = 15\%$$

$$WACC = [D/(D + E)] \times k_d(1 - t) + [E/(D + E)] \times k_s$$

$$= (100/300)(9\%)(1 - 0.3) + (200/300)(15\%) = 12.1\%$$

### References

**Question From:** Session 10 > Reading 36 > LOS h

### **Related Material:**

- Key Concepts by LOS

## Question #24 of 165

Question ID: 500869

One of the primary limitations of using beta in calculating the cost of equity in a developing country is:

- X **A) beta does not capture inflation risk.**
- ✓ **B) beta does not capture country risk.**
- X **C) the market portfolio in developing countries is often not well diversified.**

### Explanation

Because beta does not capture country risk, we add a country risk premium to the market risk premium when calculating expected returns using the CAPM.

### References

**Question From:** Session 10 > Reading 36 > LOS j

### **Related Material:**

- Key Concepts by LOS
- 

### Question #25 of 165

Question ID: 434335

A publicly traded company has a beta of 1.2, a debt/equity ratio of 1.5, ROE of 8.1%, and a marginal tax rate of 40%. The unlevered beta for this company is *closest to*:

- X A) 1.071.
- X B) 0.832.
- ✓ C) 0.632.

#### Explanation

The unlevered beta for this company is calculated as:

$$\beta_{\text{unlevered}} = 1.2 \left[ \frac{1}{1 + (1 - 0.40)1.5} \right] = 0.6316 \approx 0.632$$

#### References

**Question From:** Session 10 > Reading 36 > LOS i

#### **Related Material:**

- Key Concepts by LOS
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### Question #26 of 165

Question ID: 683880

A conflict of interest between corporate stakeholders is *least likely* to be mitigated by:

- ✓ A) issuing stock dividends.
- X B) including stock options as part of manager compensation.
- X C) covenants in debt indentures.

#### Explanation

Issuing stock dividends does not necessarily favor one group of stakeholders over another because neither firm value nor earnings are affected by issuing a stock dividend. Covenants in debt issues protect creditor interests from management actions that would increase the risk of the debt. Including stock options as part of manager compensation serves to align the interests of senior management and shareholders.

#### References

**Question From:** Session 10 > Reading 34 > LOS e

#### **Related Material:**

- Key Concepts by LOS
-

## Question #27 of 165

Question ID: 434331

A company has a target capital structure of 40% debt and 60% equity. The company is a constant growth firm that just paid a dividend of \$2.00, sells for \$27.00 per share, and has a growth rate of 8%.

- The company's bonds pay 10% coupon (semi-annual payout), mature in 20 years, and sell for \$849.54.
- The company's stock beta is 1.2.
- The company's marginal tax rate is 40%.
- The risk-free rate is 10%.
- The market risk premium is 5%.

The cost of equity using the capital asset pricing model (CAPM) approach and the discounted cash flow approach is:

<u>CAPM</u>	<u>Discounted cash flow</u>
✓ <b>A)</b> 16.0%	16.0%
X <b>B)</b> 16.0%	15.4%
X <b>C)</b> 16.6%	15.4%

### Explanation

CAPM approach:

$$10 + (5)(1.2) = 16\%.$$

Discounted cash flow approach:

$$\text{Next-period dividend} = 2(1.08) = 2.16$$

$$(2.16 / 27) + 0.08 = 16\%$$

### References

**Question From:** Session 10 > Reading 36 > LOS h

### **Related Material:**

- Key Concepts by LOS

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## Question #28 of 165

Question ID: 414766

Carlos Rodriguez, CFA, and Regine Davis, CFA, were recently discussing the relationships between capital structure, capital budgets, and net present value (NPV) analysis. Which of the following comments made by these two individuals is *least* accurate?



- X **A)** "The optimal capital budget is determined by the intersection of a firm's marginal cost of capital curve and its investment opportunity schedule."
- ✓ **B)** "For projects with more risk than the average firm project, NPV computations should be based on the marginal cost of capital instead of the weighted average cost of capital."
- X **C)** "A break point occurs at a level of capital expenditure where one of the component costs of capital increases."

#### Explanation

The marginal cost of capital (MCC) and the weighted average cost of capital (WACC) are the same thing. If a firm's capital structure remains constant, the MCC (WACC) increases as additional capital is raised.

#### References

**Question From:** Session 10 > Reading 36 > LOS c

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #29 of 165**

Question ID: 414769

Enamel Manufacturing (EM) is considering investing in a new vehicle. EM finances new projects using retained earnings and bank loans. This new vehicle is expected to have the same level of risk as the typical investment made by EM. Which one of the following should the firm use in making its decision?

- X **A)** Cost of retained earnings.
- X **B)** After-tax cost of debt.
- ✓ **C)** Marginal cost of capital.

#### Explanation

The marginal cost of capital represents the cost of raising an additional dollar of capital. The cost of retained earnings would only be appropriate if the company avoided creditor-supplied financing or the issuance of new common or preferred stock (and preferred stock financing). The after-tax cost of debt is never sufficient, because a business, regardless of their size, always has a residual owner, and hence a cost of equity.

#### References

**Question From:** Session 10 > Reading 36 > LOS d

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #30 of 165**

Question ID: 414792

If central bank actions caused the risk-free rate to increase, what is the *most* likely change to cost of debt and equity capital?

- ☐ A) Both decrease.
- ☐ B) One increase and one decrease.
- ☒ C) Both increase.

#### Explanation

An increase in the risk-free rate will cause the cost of equity to increase. It would also cause the cost of debt to increase. In either case, the nominal cost of capital is the risk-free rate plus the appropriate premium for risk.

#### References

**Question From:** Session 10 > Reading 36 > LOS h

#### **Related Material:**

- Key Concepts by LOS
- 

### Question #31 of 165

Question ID: 414735

Which of the following statements regarding the internal rate of return (IRR) is *most* accurate? The IRR:

- ☐ A) can lead to multiple IRR rates if the cash flows extend past the payback period.
- ☐ B) assumes that the reinvestment rate of the cash flows is the cost of capital.
- ☒ C) and the net present value (NPV) method lead to the same accept/reject decision for independent projects.

#### Explanation

NPV and IRR lead to the same decision for independent projects, not necessarily for mutually exclusive projects. IRR assumes that cash flows are reinvested at the IRR rate. IRR does not ignore time value of money (the payback period does), and the investor may find multiple IRRs if there are sign changes after time zero (i.e., negative cash flows after time zero).

#### References

**Question From:** Session 10 > Reading 35 > LOS e

#### **Related Material:**

- Key Concepts by LOS
- 

### Question #32 of 165

Question ID: 683876

A principal-agent relationship *most likely* exists between a company's:

- ☒ A) shareholders and managers.
- ☐ B) customers and suppliers.

X **C)** directors and regulators.

#### Explanation

The relationship between shareholders and managers is a principal-agent relationship. Shareholders, as principals, through the board of directors hire managers, as agents, to act in the best interests of the shareholders.

#### References

**Question From:** Session 10 > Reading 34 > LOS c

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #33 of 165**

Question ID: 414810

Which of the following is used to illustrate a firm's weighted average cost of capital (WACC) at different levels of capital?

- ✓ **A)** Marginal cost of capital schedule.
- X **B)** Cost of capital component schedule.
- X **C)** Schedule of marginal capital break points.

#### Explanation

The marginal cost of capital schedule shows the WACC at different levels of capital investment. It is usually upward sloping and is a function of a firm's capital structure and its cost of capital at different levels of total capital investment.

#### References

**Question From:** Session 10 > Reading 36 > LOS k

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #34 of 165**

Question ID: 434326

An analyst has gathered the following data about a company with a 12% cost of capital:

	<i>Project P</i>	<i>Project Q</i>
Cost	\$15,000	\$25,000
Life	5 years	5 years
Cash inflows	\$5,000/year	\$7,500/year

If the projects are independent, what should the company do?

- X **A)** Reject both Project P and Project Q.
- ✓ **B)** Accept both Project P and Project Q.

X **C)** Accept Project P and reject Project Q.

#### Explanation

Project P:  $N = 5$ ;  $PMT = 5,000$ ;  $FV = 0$ ;  $I/Y = 12$ ;  $CPT \rightarrow PV = 18,024$ ; NPV for Project A =  $18,024 - 15,000 = 3,024$ .

Project Q:  $N = 5$ ;  $PMT = 7,500$ ;  $FV = 0$ ;  $I/Y = 12$ ;  $CPT \rightarrow PV = 27,036$ ; NPV for Project B =  $27,036 - 25,000 = 2,036$ .

For independent projects the NPV decision rule is to accept all projects with a positive NPV. Therefore, accept both projects.

#### References

**Question From:** Session 10 > Reading 35 > LOS d

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #35 of 165**

Question ID: 414710

Landen, Inc. uses several methods to evaluate capital projects. An appropriate decision rule for Landen would be to invest in a project if it has a positive:

- ✓ **A)** net present value (NPV).
- X **B)** internal rate of return (IRR).
- X **C)** profitability index (PI).

#### Explanation

The decision rules for net present value, profitability index, and internal rate of return are to invest in a project if  $NPV > 0$ ,  $IRR >$  required rate of return, or  $PI > 1$ .

#### References

**Question From:** Session 10 > Reading 35 > LOS d

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #36 of 165**

Question ID: 414717

Tapley Acquisition, Inc., is considering the purchase of Tangent Company. The acquisition would require an initial investment of \$190,000, but Tapley's after-tax net cash flows would increase by \$30,000 per year and remain at this new level forever. Assume a cost of capital of 15%. Should Tapley buy Tangent?

- ✓ **A)** Yes, because the NPV = \$10,000.
- ✗ **B)** No, because  $k > \text{IRR}$ .
- ✗ **C)** Yes, because the NPV = \$30,000.

#### Explanation

This is a perpetuity.

$$\text{PV} = \text{PMT} / i = 30,000 / 0.15 = 200,000$$

$$200,000 - 190,000 = 10,000$$

#### References

**Question From:** Session 10 > Reading 35 > LOS d

#### **Related Material:**

- Key Concepts by LOS

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## Question #37 of 165

Question ID: 414718

A firm is reviewing an investment opportunity that requires an initial cash outlay of \$336,875 and promises to return the following irregular payments:

Year 1: \$100,000  
Year 2: \$82,000  
Year 3: \$76,000  
Year 4: \$111,000  
Year 5: \$142,000

If the required rate of return for the firm is 8%, what is the net present value of the investment? (You'll need to use your financial calculator.)

- ✓ **A)** \$64,582.
- ✗ **B)** \$99,860.
- ✗ **C)** \$86,133.

#### Explanation

In order to determine the net present value of the investment, given the required rate of return; we can discount each cash flow to its present value, sum the present value, and subtract the required investment.

Year	Cash Flow	PV of Cash flow at 8%
0	-336,875.00	-336,875.00
1	100,000.00	92,592.59
2	82,000.00	70,301.78
3	76,000.00	60,331.25

4	111,000.00	81,588.31
5	142,000.00	96,642.81
Net Present Value		64,581.74

### References

**Question From:** Session 10 > Reading 35 > LOS d

### Related Material:

- Key Concepts by LOS

## Question #38 of 165

Question ID: 414730

Which of the following statements about the internal rate of return (IRR) and net present value (NPV) is *least* accurate?

- ☒ **A)** The IRR is the discount rate that equates the present value of the cash inflows with the present value of the outflows.
- ☒ **B)** For mutually exclusive projects, if the NPV rankings and the IRR rankings give conflicting signals, you should select the project with the higher IRR.
- ☒ **C)** The discount rate that causes the project's NPV to be equal to zero is the project's IRR.

### Explanation

The NPV method is always preferred over the IRR, because the NPV method assumes cash flows are reinvested at the cost of capital. Conversely, the IRR assumes cash flows can be reinvested at the IRR. The IRR is not an actual market rate.

### References

**Question From:** Session 10 > Reading 35 > LOS e

### Related Material:

- Key Concepts by LOS

## Question #39 of 165

Question ID: 414779

Which of the following is *least likely* to be useful to an analyst when estimating the cost of raising capital through the issuance of non-callable, nonconvertible preferred stock?

- ☒ **A)** The firm's corporate tax rate.
- ☒ **B)** The stated par value of the preferred issue.
- ☒ **C)** The preferred stock's dividend rate.

### Explanation

The corporate tax rate is not a relevant factor when calculating the cost of preferred stock.

The cost of preferred stock,  $k_{ps}$  is expressed as:

$$k_{ps} = D_{ps} / P$$

where:

$D_{ps}$  = dividend per share = dividend rate × stated par value

P = market price

#### References

**Question From:** Session 10 > Reading 36 > LOS g

#### **Related Material:**

- Key Concepts by LOS
- 

### Question #40 of 165

Question ID: 414781

Justin Lopez, CFA, is the Chief Financial Officer of Waterbury Corporation. Lopez has just been informed that the U.S. Internal Revenue Code may be revised such that the maximum marginal corporate tax rate will be increased. Since Waterbury's taxable income is routinely in the highest marginal tax bracket, Lopez is concerned about the potential impact of the proposed change. Assuming that Waterbury maintains its target capital structure, which of the following is *least likely* to be affected by the proposed tax change?

- ☐ A) Waterbury's after-tax cost of corporate debt.
- ☒ B) Waterbury's after-tax cost of noncallable, nonconvertible preferred stock.
- ☐ C) Waterbury's return on equity (ROE).

#### Explanation

Corporate taxes do not affect the cost of preferred stock to the issuing firm. Waterbury's after-tax cost of debt, and consequently, its weighted average cost of capital will decrease because the tax savings on interest will increase. Also, since taxes impact net income, Waterbury's ROE will be affected by the change.

#### References

**Question From:** Session 10 > Reading 36 > LOS g

#### **Related Material:**

- Key Concepts by LOS
- 

### Question #41 of 165

Question ID: 414786

The cost of preferred stock is equal to the preferred stock dividend:

- X **A)** multiplied by the market price.
- ✓ **B)** divided by the market price.
- X **C)** divided by its par value.

#### Explanation

The cost of preferred stock,  $k_{ps}$ , is  $D_{ps} \div \text{price}$ .

#### References

**Question From:** Session 10 > Reading 36 > LOS h

#### **Related Material:**

- Key Concepts by LOS

### **Question #42 of 165**

Question ID: 460665

The Garden and Home Store recently issued preferred stock paying \$2 annual dividends. The price of its preferred stock is \$20. The after-tax cost of fixed-rate debt capital is 6% and the cost of common stock equity is 12%. The cost of preferred stock is *closest to*:

- ✓ **A)** 10%.
- X **B)** 11%.
- X **C)** 9%.

#### Explanation

Preferred stock pays constant dividends into perpetuity. The price of preferred stock equals the present value of the preferred stock dividends:  $\$20 = \$2 / k_{ps}$ . Therefore, the cost of preferred stock capital equals  $\$2 / \$20 = 0.10 = 10\%$ .

#### References

**Question From:** Session 10 > Reading 36 > LOS g

#### **Related Material:**

- Key Concepts by LOS

### **Question #43 of 165**

Question ID: 414805

Arlington Machinery currently has assets on its balance sheet of \$300 million that is financed with 70% equity and 30% debt. The executive management team at Arlington is considering a major expansion that would require raising additional capital. Jeffery Marian, an analyst with Arlington Machinery, has put together the following schedule for the costs of debt and equity:

<i>Amount of New Debt</i> <i>(in millions)</i>	<i>After-tax</i> <i>Cost of Debt</i>	<i>Amount of New Equity</i> <i>(in millions)</i>	<i>Cost of Equity</i>



\$0 to \$49	4.0%	\$0 to \$99	7.0%
\$50 to \$99	4.2%	\$100 to \$199	8.0%
\$100 to \$149	4.5%	\$200 to \$299	9.0%

In a presentation to Arlington's executive management team, Marian makes the following statements:

Statement 1: If we maintain our target capital structure of 70% equity and 30% debt, the breakpoint at which our cost of equity will increase to 9.0% is approximately \$286 million in new capital.

Statement 2: If we want to finance total assets of \$600 million, our weighted average cost of capital (WACC) for the additional financing needed will be 7.56%.

Marian's statements are:

	<u>Statement 1</u>	<u>Statement 2</u>
X <b>A)</b> Incorrect	Incorrect	
X <b>B)</b> Correct	Incorrect	
✓ <b>C)</b> Correct	Correct	

#### Explanation

Marian's first statement is correct. A breakpoint calculated as (amount of capital where component cost changes / weight of component in the WACC). The component cost of equity for Arlington will increase when the amount of new equity raised is \$200 million, which will occur at  $(\$200 \text{ million} / 0.70) = \$285.71 \text{ million}$ , or \$286 million of new capital.

Marian's second statement is also correct. If Arlington wants to finance \$600 million of total assets, the firm will need to raise  $\$600 - \$300 = \$300$  million of additional capital. Using the target capital structure of 70% equity and 30% debt, Arlington will need to raise  $\$300 \times 0.70 = \$210$  million in new equity and  $\$300 \times 0.30 = \$90$  million in new debt. Looking at the capital schedules, these levels of new financing correspond with rates of 9.0% and 4.2% for costs of equity and debt respectively, and the WACC is equal to  $(9.0\% \times 0.70) + (4.2\% \times 0.30) = 7.56\%$ .

#### References

**Question From:** Session 10 > Reading 36 > LOS k

#### **Related Material:**

- Key Concepts by LOS

## Question #44 of 165

Question ID: 414704

The Chief Financial Officer of Large Closeouts Inc. (LCI) determines that the firm must engage in capital rationing for its capital budgeting projects. Which of the following describes the *most likely* reason for LCI to use capital rationing? LCI:

- X **A)** would like to arrange projects so that investing in a project today provides the option to accept or reject certain future projects.

- ✓ **B)** has a limited amount of funds to invest.
- ✗ **C)** must choose between projects that compete with one another.

#### Explanation

Capital rationing exists when a company has a fixed (maximum) amount of funds to invest. If profitable project opportunities exceed the amount of funds available, the firm must ration, or prioritize its funds to achieve the maximum value for shareholders given its capital limitations.

#### References

**Question From:** Session 10 > Reading 35 > LOS c

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #45 of 165**

Question ID: 414794

A company's outstanding 20-year, annual-pay 6% coupon bonds are selling for \$894. At a tax rate of 40%, the company's after-tax cost of debt capital is *closest* to:

- ✗ **A)** 5.1%
- ✓ **B)** 4.2%.
- ✗ **C)** 7.0%

#### Explanation

Pretax cost of debt:  $N = 20$ ;  $FV = 1000$ ;  $PV = -894$ ;  $PMT = 60$ ;  $CPT \rightarrow I/Y = 7\%$

After-tax cost of debt:  $k_d = (7\%)(1 - 0.4) = 4.2\%$

#### References

**Question From:** Session 10 > Reading 36 > LOS h

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #46 of 165**

Question ID: 414698

Ashlyn Lutz makes the following statements to her supervisor, Paul Ulring, regarding the basic principles of capital budgeting:

Statement 1: The timing of expected cash flows is crucial for determining the profitability of a capital budgeting project.

Statement 2: Capital budgeting decisions should be based on the after-tax net income produced by the capital project.

Which of the following regarding Lutz's statements is *most* accurate?

	<u>Statement 1</u>	<u>Statement 2</u>
✓ <b>A)</b>	Correct	Incorrect
X <b>B)</b>	Correct	Correct
X <b>C)</b>	Incorrect	Correct

#### Explanation

Lutz's first statement is correct. The timing of cash flows is important for making correct capital budgeting decisions. Capital budgeting decisions account for the time value of money. Lutz's second statement is incorrect. Capital budgeting decisions should be based on incremental after-tax cash flows, not net (accounting) income.

#### References

**Question From:** Session 10 > Reading 35 > LOS b

#### **Related Material:**

- Key Concepts by LOS

## **Question #47 of 165**

Question ID: 414752

An analyst gathered the following data about a company:

<i>Capital Structure</i>	<i>Required Rate of Return</i>
30% debt	10% for debt
20% preferred stock	11% for preferred stock
50% common stock	18% for common stock

Assuming a 40% tax rate, what after-tax rate of return must the company earn on its investments?

- ✓ **A)** 13.0%.
- X **B)** 10.0%.
- X **C)** 14.2%.

#### Explanation

$$(0.3)(0.1)(1 - 0.4) + (0.2)(0.11) + (0.5)(0.18) = 0.13$$

#### References

**Question From:** Session 10 > Reading 36 > LOS a

#### **Related Material:**

- Key Concepts by LOS

## Question #48 of 165

Question ID: 414748

Which of the following events will *reduce* a company's weighted average cost of capital (WACC)?

- ☐ A) A reduction in the company's bond rating.
- ☒ B) A reduction in the market risk premium.
- ☐ C) An increase in expected inflation.

### Explanation

An increase in either the company's beta or the market risk premium will cause the WACC to increase using the CAPM approach. A reduction in the market risk premium will reduce the cost of equity for WACC.

### References

**Question From:** Session 10 > Reading 36 > LOS a

### **Related Material:**

- Key Concepts by LOS
- 

## Question #49 of 165

Question ID: 683872

The stakeholders of a company that prefer a relatively riskier company strategy that has the potential for superior company performance are:

- ☐ A) creditors.
- ☐ B) suppliers.
- ☒ C) shareholders.

### Explanation

Shareholders have the greatest gains from superior company performance. Suppliers may benefit but, in general, have a preference for stable business operations and continuation of their business relationship with the company. Creditors prefer less risk because their potential gains from superior company performance are limited while they have significant downside risk.

### References

**Question From:** Session 10 > Reading 34 > LOS b

### **Related Material:**

- Key Concepts by LOS
- 

## Question #50 of 165

Question ID: 414777

The debt of Savanna Equipment, Inc. has an average maturity of ten years and a BBB rating. A market yield to maturity is not available because the debt is not publicly traded, but the market yield on debt with similar characteristics is 8.33%. Savanna is

planning to issue new ten-year notes that would be subordinate to the firm's existing debt. The company's marginal tax rate is 40%. The *most* appropriate estimate of the after-tax cost of this new debt is:

- ☐ A) Between 3.3% and 5.0%.
- ☐ B) 5.0%.
- ☒ C) More than 5.0%.

#### Explanation

The after-tax cost of debt similar to Savanna's existing debt is  $k_d(1 - t) = 8.33\%(1 - 0.4) = 5.0\%$ . Because the anticipated new debt will be subordinated in the company's debt structure, investors will demand a higher yield than the existing debt carries. Therefore, the appropriate after-tax cost of the new debt is more than 5.0%.

#### References

**Question From:** Session 10 > Reading 36 > LOS f

**Related Material:**

- Key Concepts by LOS
- 

### Question #51 of 165

Question ID: 487759

A company primarily engaged in the production of cement has the following characteristics:

- Beta = 0.8.
- Market value debt = \$180 million.
- Market value equity = \$540 million.
- Effective tax rate = 25%.
- Marginal tax rate = 34%.

The asset beta that should be used by a company considering entering into cement production is *closest to*:

- ☐ A) 0.725.
- ☒ B) 0.656.
- ☐ C) 0.640.

#### Explanation

The unlevered (asset) beta is  $0.8\{1 / [1 + (1 - 0.34)(180 / 540)]\} = 0.656$ .

#### References

**Question From:** Session 10 > Reading 36 > LOS i

**Related Material:**

- Key Concepts by LOS
-

## Question #52 of 165

Question ID: 414719

A company is considering the purchase of a copier that costs \$5,000. Assume a cost of capital of 10 percent and the following cash flow schedule:

- Year 1: \$3,000
- Year 2: \$2,000
- Year 3: \$2,000

Determine the project's payback period and discounted payback period.

	<u>Payback Period</u>	<u>Discounted Payback Period</u>
X A)	2.0 years	1.6 years
✓ B)	2.0 years	2.4 years
X C)	2.4 years	1.6 years

### Explanation

Regarding the regular payback period, after 1 year, the amount to recover is \$2,000 (\$5,000 - \$3,000). After the second year, the amount is fully recovered.

The discounted payback period is found by first calculating the present values of each future cash flow. These present values of future cash flows are then used to determine the payback time period.

$$3,000 / (1 + .10)^1 = 2,727$$

$$2,000 / (1 + .10)^2 = 1,653$$

$$2,000 / (1 + .10)^3 = 1,503.$$

Then:

$$5,000 - (2,727 + 1,653) = 620$$

$$620 / 1,503 = .4.$$

$$\text{So, } 2 + 0.4 = 2.4.$$

### References

**Question From:** Session 10 > Reading 35 > LOS d

### **Related Material:**

- Key Concepts by LOS

## Question #53 of 165

Question ID: 414712

A company is considering the purchase of a copier that costs \$5,000. Assume a cost of capital of 10 percent and the following cash flow schedule:

- Year 1: \$3,000
- Year 2: \$2,000
- Year 3: \$2,000

Determine the project's NPV and IRR.

	<u>NPV</u>	<u>IRR</u>
X A)	\$243	20%
✓ B)	\$883	20%
X C)	\$883	15%

#### Explanation

To determine the NPV, enter the following:

PV of \$3,000 in year 1 = \$2,727, PV of \$2,000 in year 2 = \$1,653, PV of \$2,000 in year 3 = \$1,503. NPV = (\$2,727 + \$1,653 + \$1,503) – \$5,000 = 883.

You know the NPV is positive, so the IRR must be greater than 10%. You only have two choices, 15% and 20%. Pick one and solve the NPV. If it is not close to zero, then you guessed wrong; select the other one.

$[3000 \div (1 + 0.2)^1 + 2000 \div (1 + 0.2)^2 + 2000 \div (1 + 0.2)^3] - 5000 = 46$  This result is closer to zero (approximation) than the \$436 result at 15%. Therefore, the approximate IRR is 20%.

#### References

**Question From:** Session 10 > Reading 35 > LOS d

#### **Related Material:**

- Key Concepts by LOS

## Question #54 of 165

Question ID: 414761

At a recent Haggerty Semiconductors Board of Directors meeting, Merle Haggerty was asked to discuss the topic of the company's weighted average cost of capital (WACC).

At the meeting Haggerty made the following statements about the company's WACC:

Statement 1: A company creates value by producing a higher return on its assets than the cost of financing those assets. As such, the WACC is the cost of financing a firm's assets and can be viewed as the firm's opportunity cost of financing its assets.

Statement 2: Since a firm's WACC reflects the average risk of the projects that make up the firm, it is not appropriate for evaluating all new projects. It should be adjusted upward for projects with greater-than-average risk and downward for projects with less-than-average risk.

Are Statement 1 and Statement 2, as made by Haggerty CORRECT?

Statement 1      Statement 2

- ✓ **A)** Correct      Correct
- X **B)** Incorrect      Correct
- X **C)** Correct      Incorrect

#### Explanation

Each statement that Haggerty has made to the board of directors regarding the weighted average cost of capital is correct. New projects should have a return that is higher than the cost to finance those projects.

#### References

**Question From:** Session 10 > Reading 36 > LOS b

#### **Related Material:**

- Key Concepts by LOS

### **Question #55 of 165**

Question ID: 414725

Which of the following projects would have multiple internal rates of return (IRRs)? The cost of capital for all projects is 9.75%.

<i>Cash Flows</i>	<i>Blackjack</i>	<i>Roulette</i>	<i>Keno</i>
T <sub>0</sub>	-10,000	-12,000	-8,000
T <sub>1</sub>	10,000	7,000	4,000
T <sub>2</sub>	15,000	2,000	0
T <sub>3</sub>	-10,000	2,000	6,000

- X **A)** Projects Roulette and Keno.
- X **B)** Projects Blackjack and Keno.
- ✓ **C)** Project Blackjack only.

#### Explanation

The multiple IRR problem occurs if a project has non-normal cash flows, that is, the sign of the net cash flows changes from negative to positive to negative, or vice versa. For the exam, a shortcut to look for is the project cash flows changing signs more than once. Only Project *Blackjack* has this cash flow pattern. The 0 net cash flow in T<sub>2</sub> for Project Keno and likely negative net present value (NPV) for Project Roulette would not necessarily result in multiple IRRs.

#### References

**Question From:** Session 10 > Reading 35 > LOS e

#### **Related Material:**

- Key Concepts by LOS



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## Question #56 of 165

Question ID: 414711

Which of the following statements about the payback period is NOT correct?

- ☐ A) The payback period is the number of years it takes to recover the original cost of the investment.
- ☒ B) The payback method considers all cash flows throughout the entire life of a project.
- ☐ C) The payback period provides a rough measure of a project's liquidity and risk.

### Explanation

The payback period does not take any cash flows after the payback point into consideration.

### References

**Question From:** Session 10 > Reading 35 > LOS d

### **Related Material:**

- Key Concepts by LOS
- 

## Question #57 of 165

Question ID: 683883

A company director's duty of loyalty is *most accurately* described as requiring a director to:

- ☐ A) perform his or her duties in good faith and with due diligence.
- ☐ B) carry out the duties assigned by the managers of the company.
- ☒ C) act in the interests of the company and its shareholders.

### Explanation

The duty of loyalty requires a company director to act in the interests of the company and its shareholders. The duty of care requires a director to act in good faith, with due diligence, and in an informed manner. The board of directors is responsible for appointing the company's managers; in companies that do not practice CEO duality, the managers do not assign duties to board members.

### References

**Question From:** Session 10 > Reading 34 > LOS f

### **Related Material:**

- Key Concepts by LOS
- 

## Question #58 of 165

Question ID: 414750

Helmut Humm, manager at a large U.S. firm, has just been assigned to the capital budgeting area to replace a person who left suddenly. One of Humm's first tasks is to calculate the company's weighted average cost of capital (WACC) - and fast! The CEO

is scheduled to present to the board in half an hour and needs the WACC - now! Luckily, Humm finds clear notes on the target capital component weights. Unfortunately, all he can find for the cost of capital components is some handwritten notes. He can make out the numbers, but not the corresponding capital component. As time runs out, he has to guess.

Here is what Humm deciphered:

- Target weights:  $w_d = 30\%$ ,  $w_{ps} = 20\%$ ,  $w_{ce} = 50\%$ , where  $w_d$ ,  $w_{ps}$ , and  $w_{ce}$  are the weights used for debt, preferred stock, and common equity.
- Cost of components (in no particular order): 6.0%, 15.0%, and 8.5%.
- The cost of debt is the after-tax cost.

If Humm guesses correctly, the WACC is:

- ☐ A) 9.2%.
- ☐ B) 9.0%.
- ☒ C) 11.0%.

#### Explanation

If Humm remembers to order the capital components from cheapest to most expensive, he can calculate WACC. The order from cheapest to most expensive is: debt, preferred stock (which acts like a hybrid of debt and equity), and common equity.

Then, using the formula for  $WACC = (w_d)(k_d) + (w_{ps})(k_{ps}) + (w_{ce})(k_{ce})$

where  $w_d$ ,  $w_{ps}$ , and  $w_e$  are the weights used for debt, preferred stock, and common equity.

$$WACC = (0.30 \times 6.0\%) + (0.20 \times 8.5\%) + (0.50 \times 15.00\%) = \mathbf{11.0\%}.$$

#### References

**Question From:** Session 10 > Reading 36 > LOS a

#### **Related Material:**

- Key Concepts by LOS

## Question #59 of 165

Question ID: 434337

The before-tax cost of debt for Hardcastle Industries, Inc. is currently 8.0%, but it will increase to 8.25% when debt levels reach \$600 million. The debt-to-total assets ratio for Hardcastle is 40% and its capital structure is composed of debt and common equity only. If Hardcastle changes its target capital structure to 50% debt / 50% equity, which of the following describes the effect on the level of new investment at which the cost of debt will increase? The level will:

- ☐ A) change, but can either increase or decrease.
- ☐ B) increase.
- ☒ C) decrease.

#### Explanation

A break point refers to a level of new investment at which a component's cost of capital changes. The formula for break point is:

$$\text{break point} = \frac{\text{amount of capital at which a component's cost of capital changes}}{\text{weight of the component in the capital structure}}$$

As indicated, as the weight of a capital component in the capital structure increases, the break point at which a change in the component's cost will decline. No computation is necessary, but when Hardcastle has 40% debt, the breakpoint is \$600,000,000 / 0.4 = \$1.5 billion. If Hardcastle's debt increases to 50%, the breakpoint will decline to \$600,000,000 / 0.5 = \$1.2 billion.

#### References

**Question From:** Session 10 > Reading 36 > LOS k

**Related Material:**

- Key Concepts by LOS
- 

### Question #60 of 165

Question ID: 460661

A firm is evaluating two mutually exclusive projects of the same risk class, Project X and Project Y. Both have the same initial cash outlay and both have positive NPVs. Which of the following is a sufficient reason to choose Project X over Project Y?

- ☐ A) Project Y has a lower internal rate of return than Project X.
- ☒ B) Project Y has a lower profitability index than Project X.
- ☐ C) Project X has both a shorter payback period and a shorter discounted payback period compared to Project Y.

#### Explanation

The correct method of choosing between two mutually exclusive projects is to choose the one with the higher NPV. The profitability index is calculated as the present value of the future cash flows divided by the initial outlay for the project. Because both projects have the same initial cash outlay, the one with the higher profitability index has both higher present value of future cash flows and the higher NPV. Ranking projects on their payback periods or their internal rates of return can lead to incorrect ranking.

#### References

**Question From:** Session 10 > Reading 35 > LOS e

**Related Material:**

- Key Concepts by LOS
- 

### Question #61 of 165

Question ID: 414771

Which of the following statements is *least* accurate regarding the marginal cost of capital's role in determining the net present value (NPV) of a project?

- X **A)** Projects for which the present value of the after-tax cash inflows is greater than the present value of the after-tax cash outflows should be undertaken by the firm.
- X **B)** When using a firm's marginal cost of capital to evaluate a specific project, there is an implicit assumption that the capital structure of the firm will remain at the target capital structure over the life of the project.
- ✓ **C)** The NPVs of potential projects of above-average risk should be calculated using the marginal cost of capital for the firm.

#### Explanation

The WACC is the appropriate discount rate for projects that have approximately the same level of risk as the firm's existing projects. This is because the component costs of capital used to calculate the firm's WACC are based on the existing level of firm risk. To evaluate a project with above (the firm's) average risk, a discount rate greater than the firm's existing WACC should be used. Projects with below-average risk should be evaluated using a discount rate less than the firm's WACC. An additional issue to consider when using a firm's WACC (marginal cost of capital) to evaluate a specific project is that there is an implicit assumption that the capital structure of the firm will remain at the target capital structure over the life of the project. These complexities aside, we can still conclude that the NPVs of potential projects of firm-average risk should be calculated using the marginal cost of capital for the firm. Projects for which the present value of the after-tax cash inflows is greater than the present value of the after-tax cash outflows should be undertaken by the firm.

#### References

**Question From:** Session 10 > Reading 36 > LOS e

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #62 of 165**

Question ID: 414802

In order to more accurately estimate the cost of equity for a company situated in a developing market, an analyst should:

- X **A)** use the yield on the sovereign debt of the developing country instead of the risk free rate when using the capital asset pricing model (CAPM).
- X **B)** add a country risk premium to the risk-free rate when using the capital asset pricing model (CAPM).
- ✓ **C)** add a country risk premium to the market risk premium when using the capital asset pricing model (CAPM).

#### Explanation

In order to reflect the increased risk when investing in a developing country, a country risk premium is added to the market risk premium when using the CAPM.

#### References

**Question From:** Session 10 > Reading 36 > LOS j

#### **Related Material:**

- Key Concepts by LOS
- 

### Question #63 of 165

Question ID: 414772

Which of the following statements about the role of the marginal cost of capital in determining the net present value of a project is *most* accurate? The marginal cost of capital should be used to discount the cash flows:

- X **A)** if the firm's capital structure is expected to change during the project's life.
- X **B)** of all projects the firm is considering.
- ✓ **C)** for potential projects that have a level of risk near that of the firm's average project.

#### Explanation

Net present values of projects with the average risk for the firm should be determined using the firm's marginal cost of capital. The discount rate should be adjusted for projects with above-average or below-average risk. Using the marginal cost of capital assumes the firm's capital structure does not change over the life of the project.

#### References

**Question From:** Session 10 > Reading 36 > LOS e

#### **Related Material:**

- Key Concepts by LOS
- 

### Question #64 of 165

Question ID: 414734

If the calculated net present value (NPV) is negative, which of the following must be CORRECT. The discount rate used is:

- ✓ **A)** greater than the internal rate of return (IRR).
- X **B)** less than the internal rate of return (IRR).
- X **C)** equal to the internal rate of return (IRR).

#### Explanation

When the NPV = 0, this means the discount rate used is equal to the IRR. If a discount rate is used that is higher than the IRR, the NPV will be negative. Conversely, if a discount rate is used that is lower than the IRR, the NPV will be positive.

#### References

**Question From:** Session 10 > Reading 35 > LOS e

#### **Related Material:**

- Key Concepts by LOS
-

## Question #65 of 165

Question ID: 414720

Edelman Engineering is considering including an overhead pulley system in this year's capital budget. The cash outlay for the pulley system is \$22,430. The firm's cost of capital is 14%. After-tax cash flows, including depreciation are \$7,500 for each of the next 5 years.

Calculate the internal rate of return (IRR) and the net present value (NPV) for the project, and indicate the correct accept/reject decision.

	<u>NPV</u>	<u>IRR</u>	<u>Accept/Reject</u>
X <b>A)</b>	\$15,070	14%	Reject
✓ <b>B)</b>	\$3,318	20%	Accept
X <b>C)</b>	\$15,070	14%	Accept

### Explanation

Using the cash flow keys:

CF0 = -22,430; CFj = 7,500; Nj = 5; Calculate IRR = 20%

I/Y = 14%; Calculate NPV = 3,318

Because the NPV is positive, the firm should accept the project.

### References

**Question From:** Session 10 > Reading 35 > LOS d

### **Related Material:**

- Key Concepts by LOS

## Question #66 of 165

Question ID: 414811

The *most* accurate way to account for flotation costs when issuing new equity to finance a project is to:

- X **A)** increase the cost of equity capital by dividing it by (1 - flotation cost).
- ✓ **B)** adjust cash flows in the computation of the project NPV by the dollar amount of the flotation costs.
- X **C)** increase the cost of equity capital by multiplying it by (1 + flotation cost).

### Explanation

Adjusting the cost of equity for flotation costs is incorrect because doing so entails adjusting the present value of cash flows by a fixed percentage over the life of the project. In reality, flotation costs are a cash outflow that occurs at the initiation of a project. Therefore, the correct way to account for flotation costs is to adjust the cash flows in the computation of project NPV, not the cost of equity. The dollar amount of the flotation cost should be considered an additional cash outflow at initiation of the project.

### References

**Question From:** Session 10 > Reading 36 > LOS I

**Related Material:**

- Key Concepts by LOS
- 

**Question #67 of 165**

Question ID: 414715

Which of the following statements about NPV and IRR is *least* accurate?

- X **A)** For independent projects if the IRR is > the cost of capital accept the project.
- X **B)** The NPV method assumes that all cash flows are reinvested at the cost of capital.
- ✓ **C)** For mutually exclusive projects you should use the IRR to rank and select projects.

Explanation

For mutually exclusive projects you should use *NPV* to rank and select projects.

References

**Question From:** Session 10 > Reading 35 > LOS d

**Related Material:**

- Key Concepts by LOS
- 

**Question #68 of 165**

Question ID: 485788

The following is a schedule of Tiger Company's new debt and equity capital costs (\$ millions):

<u>Amount of New Debt</u>	<u>After-tax Cost of Debt</u>	<u>Amount of New Equity</u>	<u>Cost of Equity</u>
< \$30	3.5%	< \$60	8.5%
\$30 - \$60	4.0%	\$60 - \$90	10.3%
> \$60	4.7%	> \$90	12.5%

The company has a target capital structure of 30% debt and 70% equity. Tiger needs to raise an additional \$135.0 million of capital for a new project while maintaining its target capital structure. The company's second debt break point and its marginal cost of capital (MCC) are *closest to*:

Debt Break Point #2 MCC

- X **A)** \$100 million      8.4%
- ✓ **B)** \$200 million      10.0%
- X **C)** \$200 million      8.4%

Explanation

Debt break point #2 = \$60 million / 0.30 = \$200 million.

$\$135 \text{ million} \times 30\% = \$40.5 \text{ million new debt}$   
 $\$135 \text{ million} \times 70\% = \$94.5 \text{ million new equity}$   
 $MCC = 4.0\%(0.30) + 12.5\%(0.70) = 9.95\%$ .

#### References

**Question From:** Session 10 > Reading 36 > LOS k

**Related Material:**

- Key Concepts by LOS
- 

### Question #69 of 165

Question ID: 414699

One of the basic principles of capital budgeting is that:

- X **A)** cash flows should be analyzed on a pre-tax basis.
- ✓ **B)** decisions are based on cash flows, not accounting income.
- X **C)** opportunity costs should be excluded from the analysis of a project.

#### Explanation

The five key principles of the capital budgeting process are:

1. Decisions are based on cash flows, not accounting income.
2. Cash flows are based on opportunity costs.
3. The timing of cash flows is important.
4. Cash flows are analyzed on an after-tax basis.
5. Financing costs are reflected in the project's required rate of return.

#### References

**Question From:** Session 10 > Reading 35 > LOS b

**Related Material:**

- Key Concepts by LOS
- 

### Question #70 of 165

Question ID: 414728

Which of the following statements regarding the net present value (NPV) and internal rate of return (IRR) is *least* accurate?

- X **A)** The NPV tells how much the value of the firm will increase if you accept the project.
- X **B)** For independent projects, the internal rate of return IRR and the NPV methods always yield the same accept/reject decisions.
- ✓ **C)** For mutually exclusive projects, you must accept the project with the highest NPV regardless of the sign of the NPV calculation.



### Explanation

If the NPV for two mutually exclusive projects is negative, both should be rejected.

### References

**Question From:** Session 10 > Reading 35 > LOS e

### **Related Material:**

- Key Concepts by LOS
- 

## **Question #71 of 165**

Question ID: 414722

A firm is considering a \$5,000 project that will generate an annual cash flow of \$1,000 for the next 8 years. The firm has the following financial data:

- Debt/equity ratio is 50%.
- Cost of equity capital is 15%.
- Cost of new debt is 9%.
- Tax rate is 33%.

Determine the project's net present value (NPV) and whether or not to accept it.

	<u>NPV</u>	<u>Accept / Reject</u>
X A)	+\$4,968	Accept
✓ B)	-\$33	Reject
X C)	+\$33	Accept

### Explanation

*First, calculate the weights for debt and equity*

$$\begin{aligned}w_d + w_e &= 1 \\w_d &= 0.50w_e \\0.5w_e + w_e &= 1 \\w_d &= 0.333, w_e = 0.667\end{aligned}$$

*Second, calculate WACC*

$$WACC = (w_d \times k_d) \times (1 - t) + (w_e \times k_e) = (0.333 \times 0.09 \times 0.67) + (0.667 \times 0.15) = 0.020 + 0.100 = 0.120$$

*Third, calculate the PV of the project cash flows*

$$N = 8, PMT = -1,000, FV = 0, I/Y = 12, CPT PV = 4,967$$

And finally, calculate the project NPV by subtracting out the initial cash flow

$$\text{NPV} = \$4,967 - \$5,000 = -\$33$$

#### References

**Question From:** Session 10 > Reading 36 > LOS a

#### **Related Material:**

- Key Concepts by LOS
- 

### Question #72 of 165

Question ID: 414738

Which of the following projects would *most likely* have multiple internal rates of return (IRRs)? The cost of capital for all projects is 10.0%.

Cash Flows	South	East	West
CF <sub>0</sub>	-15,000	-12,000	-8,000
CF <sub>1</sub>	10,000	7,000	4,000
CF <sub>2</sub>	-1,000	2,000	0
CF <sub>3</sub>	15,000	2,000	6,000

- ☐ A) Projects East and West.
- ☒ B) Project South only.
- ☐ C) Projects South and West.

#### Explanation

The multiple IRR problem occurs if a project has an unconventional cash flow pattern, that is, the sign of the cash flows changes more than once (from negative to positive to negative, or vice-versa). Only Project South has this cash flow pattern. Neither the zero cash flow for Project West nor the likely negative net present value for Project East would result in multiple IRRs.

#### References

**Question From:** Session 10 > Reading 35 > LOS e

#### **Related Material:**

- Key Concepts by LOS
- 

### Question #73 of 165

Question ID: 414807

A North American investment society held a panel discussion on the topics of capital costs and capital budgeting. Which of the

following comments made during this discussion is the *least* accurate?

- X **A)** Any given project's NPV will decline when a breakpoint is reached.
- X **B)** An increase in the after-tax cost of debt may occur at a break point.
- ✓ **C)** A project's internal rate of return decreases when a breakpoint is reached.

#### Explanation

The internal rate of return is independent of the firm's cost of capital. It is a function of the amount and timing of a project's cash flows.

#### References

**Question From:** Session 10 > Reading 36 > LOS k

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #74 of 165**

Question ID: 414705

Project sequencing is *best* described as:

- X **A)** arranging projects in an order such that cash flows from the first project fund subsequent projects.
- ✓ **B)** an investment in a project today that creates the opportunity to invest in other projects in the future.
- X **C)** prioritizing funds to achieve the maximum value for shareholders, given capital limitations.

#### Explanation

Projects are often sequenced through time so that investing in a project today may create the opportunity to invest in other projects in the future. Note that funding from the first project is not a requirement for project sequencing.

#### References

**Question From:** Session 10 > Reading 35 > LOS c

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #75 of 165**

Question ID: 414706

The Seattle Corporation has been presented with an investment opportunity which will yield cash flows of \$30,000 per year in years 1 through 4, \$35,000 per year in years 5 through 9, and \$40,000 in year 10. This investment will cost the firm \$150,000 today, and the firm's cost of capital is 10%. The payback period for this investment is *closest* to:

- X **A)** 5.23 years.
- X **B)** 6.12 years.

✓ **C)** 4.86 years.

Explanation

Years	0	1	2	3	4	5
Cash Flows	-\$150,000	\$30,000	\$30,000	\$30,000	\$30,000	\$35,000

\$150,000

120,000 (4 years)(30,000/year)

\$30,000

With \$30,000 unrecovered cost in year 5, and \$35,000 cash flow in year 5;  $\$30,000 / \$35,000 = 0.86$  years

$4 + 0.86 = 4.86$  years

References

**Question From:** Session 10 > Reading 35 > LOS d

**Related Material:**

- Key Concepts by LOS

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**Question #76 of 165**

Question ID: 683869

The interests of community groups affected by a company's operations are *most likely* to be considered in corporate governance under:

- ✓ **A)** stakeholder theory.
- X **B)** special interest theory.
- X **C)** shareholder theory.

Explanation

Community groups may be one of the stakeholder groups considered under stakeholder theory.

References

**Question From:** Session 10 > Reading 34 > LOS a

**Related Material:**

- Key Concepts by LOS

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**Question #77 of 165**

Question ID: 414755

Assume that a company has equal amounts of debt, common stock, and preferred stock. An increase in the corporate tax rate of a firm will cause its weighted average cost of capital (WACC) to:

- ✓ **A)** fall.
- X **B)** rise.
- X **C)** more information is needed.

#### Explanation

Recall the WACC equation:

$$WACC = [w_d \times k_d \times (1 - t)] + (w_{ps} \times k_{ps}) + (w_{ce} \times k_s)$$

The increase in the corporate tax rate will result in a lower cost of debt, resulting in a lower WACC for the company.

#### References

**Question From:** Session 10 > Reading 36 > LOS a

#### **Related Material:**

- Key Concepts by LOS
- 

## **Question #78 of 165**

Question ID: 414783

Axle Corporation earned £3.00 per share and paid a dividend of £2.40 on its common stock last year. Its common stock is trading at £40 per share. Axle is expected to have a return on equity of 15%, an effective tax rate of 34%, and to maintain its historic payout ratio going forward. In estimating Axle's after-tax cost of capital, an analyst's estimate of Axle's cost of common equity would be *closest* to:

- X **A)** 8.8%.
- ✓ **B)** 9.2%.
- X **C)** 9.0%.

#### Explanation

We can estimate the company's expected growth rate as  $ROE \times (1 - \text{payout ratio})$ :  $g = 15\% \times (1 - 2.40/3.00) = 3\%$

The expected dividend next period is then  $£2.40(1.03) = £2.47$ . Based on dividend discount model pricing, the required return on equity is  $2.47 / 40 + 3\% = 9.18\%$ .

#### References

**Question From:** Session 10 > Reading 36 > LOS h

#### **Related Material:**

- Key Concepts by LOS
-

## Question #79 of 165

Question ID: 460663

Elenore Rice, CFA, is asked to determine the appropriate weighted average cost of capital for Samson Brick Company. Rice is provided with the following data:

- Debt outstanding, market value \$10 million
- Common stock outstanding, market value \$30 million
- Marginal tax rate 40%
- Cost of common equity 12%
- Cost of debt 8%

Samson has no preferred stock. Assuming Samson's ratios reflect the firm's target capital structure, Samson's weighted average cost of capital is *closest to*:

- X A) 9.8%.
- X B) 10.4%.
- ✓ C) 10.2%.

### Explanation

The capital structure ratios are:

- Debt to total capital = \$10 / \$40 = 25%
- Equity to total capital = \$30 / \$40 = 75%

The formula for the WACC (if no preferred stock) is:

$$\text{WACC} = w_d k_d (1 - t) + w_{ce} k_{ce}$$

where  $w_d$  is the percentage of operations financed by debt,  $w_{ce}$  is the percentage of operations financed by equity,  $t$  is the marginal tax rate,  $k_d$  is the before-tax cost of debt, and  $k_{ce}$  is the cost of common equity.

$$\text{WACC} = 0.25(0.08)(0.60) + 0.75(0.12) = 0.102 = 10.2\%.$$

### References

**Question From:** Session 10 > Reading 36 > LOS b

### **Related Material:**

- Key Concepts by LOS

## Question #80 of 165

Question ID: 683878

In the context of stakeholder management, organizational infrastructure is *most accurately* described as:

- X A) a framework for defining the rights and responsibilities of stakeholders.
- X B) contractual arrangements a company enters into with its stakeholders.
- ✓ C) a company's internal procedures for addressing stakeholder relationships.

### Explanation

Organizational infrastructure refers to the practices and governance procedures that a company adopts to manage its stakeholder relationships.

### References

**Question From:** Session 10 > Reading 34 > LOS d

**Related Material:**

- Key Concepts by LOS
- 

## Question #81 of 165

Question ID: 683884

With a one-tier board structure:

- X **A)** senior managers determine corporate strategy.
- X **B)** independent directors determine company strategy.
- ✓ **C)** both executives and non-executives can serve on the board of directors.

### Explanation

Independent directors and senior managers both serve on a single board with a one-tier board structure and are jointly responsible for determining corporate strategy.

### References

**Question From:** Session 10 > Reading 34 > LOS f

**Related Material:**

- Key Concepts by LOS
- 

## Question #82 of 165

Question ID: 683877

The relationship between a company's shareholders and its senior managers is *best* described as a(n):

- ✓ **A)** agency relationship.
- X **B)** working partnership.
- X **C)** principal relationship.

### Explanation

This is an example of an agency relationship, which is also known as a principal-agent relationship. A company's senior managers are acting as agents, hired to act in the interest of shareholders who are the principal in the relationship.

### References

**Question From:** Session 10 > Reading 34 > LOS c

**Related Material:**

- Key Concepts by LOS
- 

**Question #83 of 165**

Question ID: 434336

Affluence Inc. is considering whether to expand its recreational sports division by embarking on a new project. Affluence's capital structure consists of 75% debt and 25% equity and its marginal tax rate is 30%. Aspire Brands is a publicly traded firm that specializes in recreational sports products. Aspire has a debt-to-equity ratio of 1.7, a beta of 0.8, and a marginal tax rate of 35%. Using the pure-play method with Aspire as the comparable firm, the project beta Affluence should use to calculate the cost of equity capital for this project is *closest to*:

- X **A)** 0.38.  
X **B)** 0.58.  
✓ **C)** 1.18.

**Explanation**

The unlevered asset beta is:

$$\beta_{\text{Aspire asset}} = 0.8 \left[ \frac{1}{1 + (1 - 0.35)1.7} \right] = 0.380$$

Affluence's debt-to-equity ratio =  $0.75/0.25 = 3$ . To calculate the project beta, re-lever the asset beta using Affluence's debt-to-equity ratio and marginal tax rate:

$$\beta_{\text{Affluence project}} = 0.380[1 + (1 - 0.3)(3)] = 1.178 \approx 1.18$$

**References**

**Question From:** Session 10 > Reading 36 > LOS i

**Related Material:**

- Key Concepts by LOS
- 

**Question #84 of 165**

Question ID: 414697

Financing costs for a capital project are:

- X **A)** subtracted from the net present value of a project.  
✓ **B)** captured in the project's required rate of return.  
X **C)** subtracted from estimates of a project's future cash flows.

**Explanation**

Financing costs are reflected in a project's required rate of return. Project specific financing costs should not be included as project cash flows. The firm's overall weighted average cost of capital, adjusted for project risk, should be used to discount



expected project cash flows.

#### References

**Question From:** Session 10 > Reading 35 > LOS b

**Related Material:**

- Key Concepts by LOS
- 

### Question #85 of 165

Question ID: 485785

A company is considering two mutually exclusive investment projects. The firm's cost of capital is 12%. Each project costs \$7 million and the after-tax cash flows for each are as follows:

	<u>Project One</u>	<u>Project Two</u>
Year 1	\$6.6 million	\$3.0 million
Year 2	\$1.5 million	\$3.0 million
Year 3	\$0.1 million	\$3.0 million

Indicate which project should be accepted and whether the IRR and NPV methods would lead to the same decision.

Project accepted?   Same decision?

- X **A)** Project One      No
- ✓ **B)** Project Two      No
- X **C)** Project Two      Yes

#### Explanation

The NPVs for Project One and Project Two are \$0.160 million and \$0.206 million, respectively, thus, Project Two should be selected. The IRRs for Projects One and Project Two are 14.2% and 13.7%, respectively. NPV is considered a superior method for ranking mutually exclusive projects.

#### References

**Question From:** Session 10 > Reading 35 > LOS e

**Related Material:**

- Key Concepts by LOS
- 

### Question #86 of 165

Question ID: 414746

In calculating the weighted average cost of capital (WACC), which of the following statements is *least accurate*?

- ✓ **A)** The cost of debt is equal to one minus the marginal tax rate multiplied by the coupon rate on outstanding debt.
- ✗ **B)** Different methods for estimating the cost of common equity might produce different results.
- ✗ **C)** The cost of preferred equity capital is the preferred dividend divided by the price of preferred shares.

Explanation

After-tax cost of debt = bond yield – tax savings =  $k_d - k_d t = k_d(1 - t)$

References

**Question From:** Session 10 > Reading 36 > LOS a

**Related Material:**

- Key Concepts by LOS
- 

**Question #87 of 165**

Question ID: 414707

The process of evaluating and selecting profitable long-term investments consistent with the firm's goal of shareholder wealth maximization is known as:

- ✗ **A)** monitoring.
- ✓ **B)** capital budgeting.
- ✗ **C)** financial restructuring.

Explanation

In the process of capital budgeting, a manager is making decisions about a firm's earning assets, which provide the basis for the firm's profit and value. Capital budgeting refers to investments expected to produce benefits for a period of time greater than one year. Financial restructuring is done as a result of bankruptcy and monitoring is a critical assessment aspect of capital budgeting.

References

**Question From:** Session 10 > Reading 35 > LOS d

**Related Material:**

- Key Concepts by LOS
- 

**Question #88 of 165**

Question ID: 414701

The CFO of Axis Manufacturing is evaluating the introduction of a new product. The costs of a recently completed marketing study for the new product and the possible increase in the sales of a related product made by Axis are best described (respectively) as:

- ✗ **A)** externality; cannibalization.

- ✓ **B)** sunk cost; externality.
- X **C)** opportunity cost; externality.

#### Explanation

The study is a sunk cost, and the possible increase in sales of a related product is an example of a positive externality.

#### References

**Question From:** Session 10 > Reading 35 > LOS b

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #89 of 165**

Question ID: 414733

When a company is evaluating two mutually exclusive projects that are both profitable but have conflicting NPV and IRR project rankings, the company should:

- X **A)** use a third method of evaluation such as discounted payback period.
- X **B)** accept the project with the higher internal rate of return.
- ✓ **C)** accept the project with the higher net present value.

#### Explanation

Net present value is the preferred criterion when ranking projects because it measures the firm's expected increase in wealth from undertaking a project.

#### References

**Question From:** Session 10 > Reading 35 > LOS e

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #90 of 165**

Question ID: 414729

Apple Industries, a firm with unlimited funds, is evaluating five projects. Projects A and B are independent and Projects C, D, and E are mutually exclusive. The projects are listed with their rate of return and NPV. Assume that the applicable discount rate is 10%.

<i>Project</i>	<i>Status</i>	<i>Rate of Return</i>	<i>Net Present Value</i>
A	Independent	14%	\$10,500
B	Independent	12%	\$13,400
C	Mutually Exclusive	11%	\$16,000

D	Mutually Exclusive	15%	\$14,000
E	Mutually Exclusive	12%	\$11,500

Rank the projects the firm should select.

- ✓ **A)** Project A, Project B, and Project C.
- X **B)** All projects should be selected.
- X **C)** Project A, Project B, and Project D.

#### Explanation

When it comes to independent projects, financial managers should select all with positive NPVs, resulting in inclusion of Project A and Project B. Remember that projects with positive NPVs will increase the value of the firm. Among mutually exclusive projects, financial managers would select the one with the highest NPV, in this case Project C. Although all projects have positive NPVs, only one of the latter three can be chosen. If the selection were based upon the internal rate of return, Project D would be chosen instead of Project C. This shows why NPV is the superior decision criteria because Project C is the investment that will cause the greatest increase to the value of the firm.

#### References

**Question From:** Session 10 > Reading 35 > LOS e

#### **Related Material:**

- Key Concepts by LOS

## Question #91 of 165

Question ID: 434338

Cullen Casket Company is considering a project that requires a \$175,000 cash outlay and is expected to produce cash flows of \$65,000 per year for the next four years. Cullen's tax rate is 40% and the before-tax cost of debt is 9%. The current share price for Cullen stock is \$32 per share and the expected dividend next year is \$1.50 per share. Cullen's expected growth rate is 5%. Cullen finances the project with 70% newly issued equity and 30% debt, and the flotation costs for equity are 4.5%. What is the dollar amount of the flotation costs attributable to the project, and that is the NPV for the project, assuming that flotation costs are accounted for correctly?

- |             | <u>Dollar amount<br/>of flotation costs</u> | <u>NPV of project</u> |
|-------------|---|-----------------------|
| X <b>A)</b> | \$7,875                                     | \$30,510              |
| X <b>B)</b> | \$5,513                                     | \$30,510              |
| ✓ <b>C)</b> | \$5,513                                     | \$32,872              |

#### Explanation

In order to determine the discount rate, we need to calculate the WACC.

After-tax cost of debt = 9.0% (1 - 0.40) = 5.40%

Cost of equity = (\$1.50 / \$32.00) + 0.05 = 0.0469 + 0.05 = 0.0969, or 9.69%

WACC = 0.70(9.69%) + 0.30(5.40%) = 8.40%

Since the project is financed with 70% newly issued equity, the amount of equity capital raised is  $0.70 \times \$175,000 = \$122,500$

Flotation costs are 4.5 percent, which equates to a dollar flotation cost of  $\$122,500 \times 0.045 = \$5,512.50$ .

$$NPV = -\$175,000 - \$5,513 + \frac{\$65,000}{1.084} + \frac{\$65,000}{(1.084)^2} + \frac{\$65,000}{(1.084)^3} + \frac{\$65,000}{(1.084)^4} = \$32,872$$

#### References

**Question From:** Session 10 > Reading 36 > LOS I

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #92 of 165**

Question ID: 414782

Which of the following statements is *most* accurate regarding a firm's cost of preferred shares? A firm's cost of preferred stock is:

- ✓ **A)** the dividend yield on the firm's newly-issued preferred stock.
- X **B)** approximately equal to the market price of the firm's debt as a percentage of the market price of its common shares.
- X **C)** the market price of the preferred shares as a percentage of its issuance price.

#### Explanation

The newly-issued preferred shares of most companies generally sell at par. As such, the dividend yield on a firm's newly-issued preferred shares is the market's required rate of return. The yield on a BBB corporate bond reflects a pre-tax cost of debt. Both remaining choices make no sense.

#### References

**Question From:** Session 10 > Reading 36 > LOS g

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #93 of 165**

Question ID: 414790

A firm has \$3 million in outstanding 10-year bonds, with a fixed rate of 8% (assume annual payments). The bonds trade at a price of \$92 per \$100 par in the open market. The firm's marginal tax rate is 35%. What is the after-tax component cost of debt to be used in the weighted average cost of capital (WACC) calculations?

- ✓ **A)** 6.02%.
- X **B)** 9.26%.

X C) 5.40%.

#### Explanation

If the bonds are trading at \$92 per \$100 par, the required yield is 9.26% ( $N = 10$ ;  $PV = -92$ ;  $FV = 100$ ;  $PMT = 8$ ;  $CPT I/Y = 9.26$ ). The equivalent after-tax cost of this financing is:  $9.26\% (1 - 0.35) = 6.02\%$ .

#### References

**Question From:** Session 10 > Reading 36 > LOS h

#### **Related Material:**

- Key Concepts by LOS
- 

### Question #94 of 165

Question ID: 460664

Hanson Aluminum, Inc. is considering whether to build a mill based around a new rolling technology the company has been developing. Management views this project as being riskier than the average project the company undertakes. Based on their analysis of the projected cash flows, management determines that the project's internal rate of return is equal to the company's marginal cost of capital. If the project goes forward, the company will finance it with newly issued debt with an after-tax cost less than the project's IRR. Should management accept or reject this project?

- X A) Accept, because the marginal cost of the new debt is less than the project's internal rate of return.
- X B) Accept, because the project returns the company's cost of capital.
- ✓ C) Reject, because the project reduces the value of the company when its risk is taken into account.

#### Explanation

The marginal (or weighted average) cost of capital is the appropriate discount rate for projects that have the same level of risk as the firm's existing projects. For a project with a higher degree of risk, cash flows should be discounted at a rate higher than the firm's WACC. Since this project's IRR is equal to the company's WACC, its NPV must be zero if the cash flows are discounted at the WACC. If the cash flows are discounted at a rate higher than the WACC to account for the project's higher risk, the NPV must be negative. Therefore, the project would reduce the value of the company, so management should reject it. A company considers its capital raising and budgeting decisions independently. Each investment decision must be made assuming a WACC which includes each of the different sources of capital and is based on the long-run target weights.

#### References

**Question From:** Session 10 > Reading 36 > LOS e

#### **Related Material:**

- Key Concepts by LOS
- 

### Question #95 of 165

Question ID: 683882

Smith Company's board of directors assigns responsibilities to three committees. The committee that is *most likely* to be

responsible for establishing the chief executive officer's compensation package is Smith's:

- ✓ **A)** nominations and remuneration committee.
- X **B)** audit and governance committee.
- X **C)** investment and risk committee.

#### Explanation

Compensation for a company's senior executives is typically a responsibility of a remuneration or compensation committee.

#### References

**Question From:** Session 10 > Reading 34 > LOS f

#### **Related Material:**

- Key Concepts by LOS

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### **Question #96 of 165**

Question ID: 414731

Two projects being considered by a firm are mutually exclusive and have the following projected cash flows:

<i>Year</i>	<i>Project 1 Cash Flow</i>	<i>Project 2 Cash Flow</i>
0	-\$4.0	?
1	\$3.0	\$1.7
2	\$5.0	\$3.2
3	\$2.0	\$5.8

The crossover rate of the two projects' NPV profiles is 9%. What is the initial cash flow for Project 2?

- X **A)** -\$4.51.
- X **B)** -\$5.70.
- ✓ **C)** -\$4.22.

#### Explanation

The crossover rate is the rate at which the NPV for two projects is the same. That is, it is the rate at which the two NPV profiles cross. At a discount rate of 9%, the NPV of Project 1 is:  $CF_0 = -4$ ;  $CF_1 = 3$ ;  $CF_2 = 5$ ;  $CF_3 = 2$ ;  $I = 9\%$ ;  $CPT \rightarrow NPV = \$4.51$ . Now perform the same calculations except that we need to set the unknown  $CF_0 = 0$ . The remaining entries are:  $CF_1 = 1.7$ ;  $CF_2 = 3.2$ ;  $CF_3 = 5.8$ ;  $I = 9\%$ ;  $CPT \rightarrow NPV = \$8.73$ . Since by definition the crossover rate produces the same NPV for both projects, we know that both projects should have an  $NPV = \$4.51$ . Since the NPV of Project 2 (with  $CF_0 = 0$ ) is \$8.73, the unknown cash flow must be a large enough negative amount to reduce the NPV for Project 2 from \$8.73 to \$4.51. Thus the unknown initial cash flow for Project 2 is determined as  $\$4.51 = \$8.73 + CF_0$ , or  $CF_0 = -\$4.22$ .

#### References

**Question From:** Session 10 > Reading 35 > LOS e

**Related Material:**

- Key Concepts by LOS
- 

**Question #97 of 165**

Question ID: 683881

Minority shareholder groups are *most likely* to have influence over corporate strategy when board elections:

- ✓ **A)** use cumulative voting.
- X **B)** are staggered.
- X **C)** use majority voting.

Explanation

With cumulative voting, minority shareholders are more likely to gain seats on the board of directors and influence corporate strategy and decisions than with majority voting. Staggered board elections limit the ability of shareholders to select an entirely new board, except over a period of years.

References

**Question From:** Session 10 > Reading 34 > LOS e

**Related Material:**

- Key Concepts by LOS
- 

**Question #98 of 165**

Question ID: 414778

Which of the following is *least likely* to be useful to an analyst who is estimating the pretax cost of a firm's fixed-rate debt?

- X **A)** Seniority and any special covenants of the firm's anticipated debt.
- ✓ **B)** The coupon rate on the firm's existing debt.
- X **C)** The yield to maturity of the firm's existing debt.

Explanation

Ideally, an analyst would use the YTM of a firm's existing debt as the pretax cost of new debt. When a firm's debt is not publicly traded, however, a market YTM may not be available. In this case, an analyst may use the yield curve for debt with the same rating and maturity to estimate the market YTM. If the anticipated debt has unique characteristics that affect YTM, these characteristics should be accounted for when estimating the pretax cost of debt. The cost of debt is the market interest rate (YTM) on new (marginal) debt, not the coupon rate on the firm's existing debt. If you are provided with both coupon and YTM on the exam, you should use the YTM.

References

**Question From:** Session 10 > Reading 36 > LOS f

**Related Material:**



- Key Concepts by LOS
- 

### Question #99 of 165

Question ID: 414760

Which of the following choices *best* describes the role of taxes on the after-tax cost of capital in the U.S. from the different capital sources?

	<u>Common equity</u>	<u>Preferred equity</u>	<u>Debt</u>
X <b>A)</b> No effect		Decrease	Decrease
X <b>B)</b> Decrease		Decrease	No effect
✓ <b>C)</b> No effect		No effect	Decrease

#### Explanation

In the U.S., interest paid on corporate debt is tax deductible, so the after-tax cost of debt capital is less than the before-tax cost of debt capital. Dividend payments are not tax deductible, so taxes do not decrease the cost of common or preferred equity.

#### References

**Question From:** Session 10 > Reading 36 > LOS b

#### **Related Material:**

- Key Concepts by LOS
- 

### Question #100 of 165

Question ID: 414744

A company is planning a \$50 million expansion. The expansion is to be financed by selling \$20 million in new debt and \$30 million in new common stock. The before-tax required return on debt is 9% and the required return for equity is 14%. If the company is in the 40% tax bracket, the marginal weighted average cost of capital is *closest* to:

- X **A)** 9.0%.
- X **B)** 10.0%
- ✓ **C)** 10.6%.

#### Explanation

$$(0.4)(9\%)(1 - 0.4) + (0.6)(14\%) = 10.56\%$$

#### References

**Question From:** Session 10 > Reading 36 > LOS a

#### **Related Material:**

- Key Concepts by LOS

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**Question #101 of 165**

Question ID: 434332

Genoa Corp. pays 40% of its earnings out in dividends. The return on equity (ROE) is 15%. Last year's earnings were \$5.00 per share and the dividend was just paid to shareholders. The current price of shares is \$42.00. The firm's tax rate is 30%. The cost of common equity is *closest* to:

- ✓ **A) 14.2%.**  
X **B) 16.1%.**  
X **C) 13.8%.**

**Explanation**

ROE × retention ratio = growth rate

$$15\% \times (1 - 0.40) = 9\%$$

$$D_0 = \$5.00 \times 0.40 = \$2.00$$

$$[\$2.00(1.09) / \$42.00] + 0.09 = 14.19\%$$

**References**

**Question From:** Session 10 > Reading 36 > LOS h

**Related Material:**

- Key Concepts by LOS
- 

**Question #102 of 165**

Question ID: 414716

As the director of capital budgeting for Denver Corporation, an analyst is evaluating two mutually exclusive projects with the following net cash flows:

Year	Project X	Project Z
0	-\$100,000	-\$100,000
1	\$50,000	\$10,000
2	\$40,000	\$30,000
3	\$30,000	\$40,000
4	\$10,000	\$60,000

If Denver's cost of capital is 15%, which project should be chosen?

- ✓ **A)** Neither project.
- X **B)** Project X, since it has the higher IRR.
- X **C)** Project X, since it has the higher net present value (NPV).

Explanation

NPV for Project X =  $-100,000 + 50,000 / (1.15)^1 + 40,000 / (1.15)^2 + 30,000 / (1.15)^3 + 10,000 / (1.15)^4$   
 $= -100,000 + 43,478 + 30,246 + 19,725 + 5,718 = -833$

NPV for Project Z =  $-100,000 + 10,000 / (1.15)^1 + 30,000 / (1.15)^2 + 40,000 / (1.15)^3 + 60,000 / (1.15)^4$   
 $= -100,000 + 8,696 + 22,684 + 26,301 + 34,305 = -8,014$

Reject both projects because neither has a positive NPV.

References

**Question From:** Session 10 > Reading 35 > LOS d

**Related Material:**

- Key Concepts by LOS
- 

**Question #103 of 165**

Question ID: 414739

The NPV profile is a graphical representation of the change in net present value relative to a change in the:

- X **A)** internal rate of return.
- ✓ **B)** discount rate.
- X **C)** prime rate.

Explanation

As discount rates change the net present values change. The NPV profile is a graphic illustration of how sensitive net present values are to different discount rates. By comparison, every project has a single internal rate of return and payback period because the values are determined solely by the investment's expected cash flows.

References

**Question From:** Session 10 > Reading 35 > LOS e

**Related Material:**

- Key Concepts by LOS
- 

**Question #104 of 165**

Question ID: 414762

A financial analyst is estimating the effect on the cost of capital for a company of a decrease in the marginal tax rate. The

company is financed with debt and common equity. A decrease in the firm's marginal tax rate would:

- ☐ A) decrease the cost of capital because of a lower after-tax cost of debt and equity.
- ☐ B) increase the cost of capital because of a higher after-tax cost of debt and equity.
- ☒ C) increase the cost of capital because of a higher after-tax cost of debt.

#### Explanation

The cost of debt capital is affected by the marginal tax rate because interest costs are tax-deductible. A lower marginal tax rate decreases the value to the firm of the tax deduction for interest and therefore increases the after-tax cost of debt capital. Cost of equity capital is not affected by the marginal tax rate.

#### References

**Question From:** Session 10 > Reading 36 > LOS b

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #105 of 165**

Question ID: 434328

A company has a target capital structure of 40% debt and 60% equity. The company is a constant growth firm that just paid a dividend of \$2.00, sells for \$27.00 per share, and has a growth rate of 8%.

- The company's bonds pay 10% coupon (semi-annual payout), mature in 20 years, and sell for \$849.54.
- The company's stock beta is 1.2.
- The company's marginal tax rate is 40%.
- The risk-free rate is 10%.
- The market risk premium is 5%.

The company's after-tax cost of debt is:

- ☐ A) 4.8%.
- ☐ B) 12.0%.
- ☒ C) 7.2%.

#### Explanation

Before-tax cost of debt capital:

$N = 40$ ;  $PMT = 50$ ;  $FV = 1,000$ ;  $PV = 849.54$ ;  $CPT\ I/Y = 6\% \times 2 = 12\%$

After-tax cost of debt capital =  $(12)(1 - 0.4) = 7.2\%$ .

#### References

**Question From:** Session 10 > Reading 36 > LOS f

#### **Related Material:**

- Key Concepts by LOS

## Question #106 of 165

Question ID: 414808

BPM Ltd. has the following capital structure: 40% debt and 60% equity. The cost of equity is 16%. Its before tax cost of debt is 8%, and its corporate tax rate is 40%. BPM is considering between two mutually exclusive projects that have the following cash flows:

	<i>Today</i>	<i>Year 1</i>	<i>Year 2</i>	<i>Year 3</i>
Project X	Cost = 100 million	+ 50 million	+ 30 million	+ 50 million
Project Y	Cost = 150 million	+ 50 million	+ 60 million	+ 80 million

Which project should BPM choose?

- ✓ **A)** Project X because its NPV is \$5 million.
- X **B)** Project Y because its NPV is \$22 million.
- X **C)** Project X because its NPV is \$16 million.

### Explanation

Use the WACC as the discount rate to calculate NPV.

$$\text{WACC} = (w_d \times (k_d \times (1 - T))) + (w_e \times k_e)$$

$$= [0.4 \times 0.08 \times (1 - 0.4)] + [0.6 \times 0.16] = 11.52\%$$

$$\text{NPV of project X} = -100 + 50 / (1.1152) + 30 / (1.1152^2) + 50 / (1.1152^3) = +5.01$$

$$\text{NPV of project Y} = -150 + 50 / (1.1152) + 60 / (1.1152^2) + 80 / (1.1152^3) = +0.76$$

### References

**Question From:** Session 10 > Reading 36 > LOS k

### **Related Material:**

- Key Concepts by LOS

## Question #107 of 165

Question ID: 414784

A \$100 par, 8% preferred stock is currently selling for \$80. What is the cost of preferred equity?

- X **A)** 10.8%.
- ✓ **B)** 10.0%.
- X **C)** 8.0%.

### Explanation

$$k_{ps} = \$8 / \$80 = 10\%$$

## References

**Question From:** Session 10 > Reading 36 > LOS h

### **Related Material:**

- Key Concepts by LOS
- 

## **Question #108 of 165**

Question ID: 683874

Which of the following stakeholders are *most likely* to benefit from a company's growth and excellent financial performance?

- ☐ A) Creditors.
- ☐ B) Customers.
- ☒ C) Governments.

### Explanation

Governments receive greater tax revenues when financial performance is excellent and profits are higher. Creditors do not receive extra returns for performance better than that is adequate to repay debt. Customers seek company stability and ongoing relationships with the company.

## References

**Question From:** Session 10 > Reading 34 > LOS b

### **Related Material:**

- Key Concepts by LOS
- 

## **Question #109 of 165**

Question ID: 496831

A company is considering a \$10,000 project that will last 5 years.

- Annual after tax cash flows are expected to be \$3,000
- Cost of capital = 9.7%

What is the project's net present value (NPV)?

- ☒ A) +\$1,460.
- ☐ B) +\$11,460.
- ☐ C) -\$1,460.

### Explanation

*Calculate the PV of the project cash flows*

N = 5, PMT = -3,000, FV = 0, I/Y = 9.7, CPT → PV = 11,460

Calculate the project NPV by subtracting out the initial cash flow

$$\text{NPV} = \$11,460 - \$10,000 = \$1,460$$

#### References

**Question From:** Session 10 > Reading 35 > LOS d

**Related Material:**

- Key Concepts by LOS
- 

### Question #110 of 165

Question ID: 414749

The following data is regarding the Link Company:

- A target debt/equity ratio of 0.5
- Bonds are currently yielding 10%
- Link is a constant growth firm that just paid a dividend of \$3.00
- Stock sells for \$31.50 per share, and has a growth rate of 5%
- Marginal tax rate is 40%

What is Link's after-tax cost of capital?

X **A)** 10.5%.

X **B)** 12.5%.

✓ **C)** 12.0%.

#### Explanation

Use the revised form of the constant growth model to determine the cost of equity. Use algebra to determine the weights for the target capital structure realizing that debt is 50% of equity. Substitute 0.5E for D in the formula below.

$$k_s = D_1 \div P_0 + \text{growth} = (3)(1.05) \div (31.50) + 0.05 = 0.15 \text{ or } 15\%$$

$$V = \text{debt} + \text{equity} = 0.5 + 1 = 1.5$$

$$\text{WACC} = (E \div V)(k_s) + (D \div V)(k_{\text{debt}})(1 - t)$$

$$\text{WACC} = (1 \div 1.5)(0.15) + (0.5 \div 1.5)(0.10)(1 - 0.4) = 0.1 + 0.02 = 0.12 \text{ or } 12\%$$

#### References

**Question From:** Session 10 > Reading 36 > LOS a

**Related Material:**

- Key Concepts by LOS
-

## Question #111 of 165

Question ID: 460657

The greatest amount of detailed capital budgeting analysis is typically required when deciding whether to:

- ✓ **A)** introduce a new product or develop a new market.
- X **B)** replace a functioning machine with a newer model to reduce costs.
- X **C)** expand production capacity.

### Explanation

Introducing a new product or entering a new market involves sales and expense projections that can be highly uncertain. Expanding capacity or replacing old machinery involves less uncertainty and analysis.

### References

**Question From:** Session 10 > Reading 35 > LOS a

### **Related Material:**

- Key Concepts by LOS
- 

## Question #112 of 165

Question ID: 460658

The effects that the acceptance of a project may have on other firm cash flows are *best* described as:

- X **A)** pure plays.
- ✓ **B)** externalities.
- X **C)** opportunity costs.

### Explanation

Externalities refer to the effects that the acceptance of a project may have on other firm cash flows. Cannibalization is one example of an externality.

### References

**Question From:** Session 10 > Reading 35 > LOS b

### **Related Material:**

- Key Concepts by LOS
- 

## Question #113 of 165

Question ID: 412846

Jack Smith, CFA, is analyzing independent investment projects X and Y. Smith has calculated the net present value (NPV) and internal rate of return (IRR) for each project:

Project X: NPV = \$250; IRR = 15%

Project Y: NPV = \$5,000; IRR = 8%



Smith should make which of the following recommendations concerning the two projects?

- ☐ A) Accept Project X only.
- ☒ B) Accept both projects.
- ☐ C) Accept Project Y only.

#### Explanation

The projects are independent, meaning that either one or both projects may be chosen. Both projects have positive NPVs, therefore both projects add to shareholder wealth and both projects should be accepted.

#### References

**Question From:** Session 10 > Reading 35 > LOS d

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #114 of 165**

Question ID: 414736

If a project has a negative cash flow during its life or at the end of its life, the project *most likely* has:

- ☒ A) more than one internal rate of return.
- ☐ B) a negative internal rate of return.
- ☐ C) multiple net present values.

#### Explanation

Projects with unconventional cash flows (where the sign of the cash flow changes from minus to plus to back to minus) will have multiple internal rates of return. However, one will still be able to calculate a single net present value for the cash flow pattern.

#### References

**Question From:** Session 10 > Reading 35 > LOS e

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #115 of 165**

Question ID: 414804

Simcox Financial is considering raising additional capital to finance a takeover of one of the firm's major competitors. Reuben Mellum, an analyst with Simcox, has put together the following schedule of costs related to raising new capital:

Amount of New Debt (in millions) After-tax Cost of Debt Amount of New Equity (in millions) Cost of Equity

\$0 to \$149

4.2%

\$0 to \$399

7.5%

\$150 to \$349

5.0%

\$400 to \$799

8.5%

Assuming that Simcox has a target debt to equity ratio of 65% equity and 35% debt, what are the marginal cost of capital schedule breakpoints for raising additional debt capital and equity capital, respectively?

<u>Breakpoint for new debt capital</u>	<u>Breakpoint for new equity capital</u>
--	--

- |                      |                 |
|----------------------|-----------------|
| X A) \$375.0 million | \$615.4 million |
| X B) \$428.6 million | \$533.3 million |
| ✓ C) \$428.6 million | \$615.4 million |

#### Explanation

A breakpoint is calculated as the amount of capital where component cost changes / weight of component in the WACC. The breakpoint for raising new debt capital occurs at  $(\$150 / 0.35) = \$428.6$  million, and the breakpoint for raising new equity capital occurs at  $(\$400 / 0.65) = \$615.4$  million.

#### References

**Question From:** Session 10 > Reading 36 > LOS k

#### **Related Material:**

- Key Concepts by LOS

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## Question #116 of 165

Question ID: 683890

Thematic investing is *most accurately* described as:

- ✓ A) considering a single environmental or social factor when selecting investments.
- X B) identifying the best companies in each sector with respect to environmental and social factors.
- X C) excluding companies or sectors from consideration for investment based on environmental and social factors.

#### Explanation

Thematic investing refers to selecting investments with a view to a specific environmental, social, or governance factor. Identifying the best companies in each sector with respect to environmental and social factors is referred to as best-in-class investing. Excluding companies or sectors from consideration for investment based on environmental and social factors is referred to as negative screening.

#### References

**Question From:** Session 10 > Reading 34 > LOS k

#### **Related Material:**

- Key Concepts by LOS

## Question #117 of 165

Question ID: 414713

A firm is considering a \$200,000 project that will last 3 years and has the following financial data:

- Annual after-tax cash flows are expected to be \$90,000.
- Target debt/equity ratio is 0.4.
- Cost of equity is 14%.
- Cost of debt is 7%.
- Tax rate is 34%.

Determine the project's payback period and net present value (NPV).

### Payback Period NPV

- X **A)** 2.43 years      \$18,716
- ✓ **B)** 2.22 years      \$18,716
- X **C)** 2.22 years      \$21,872

### Explanation

#### Payback Period

$$\$200,000 / \$90,000 = 2.22 \text{ years}$$

#### NPV Method

*First, calculate the weights for debt and equity*

$$\begin{aligned}w_d + w_e &= 1 \\w_e &= 1 - w_d \\w_d / w_e &= 0.40 \\w_d &= 0.40 \times (1 - w_d) \\w_d &= 0.40 - 0.40w_d \\1.40w_d &= 0.40 \\w_d &= 0.286, w_e = 0.714\end{aligned}$$

*Second, calculate WACC*

$$WACC = (w_d \times k_d) \times (1 - t) + (w_e \times k_e) = (0.286 \times 0.07 \times 0.66) + (0.714 \times 0.14) = 0.0132 + 0.100 = 0.1132$$

*Third, calculate the PV of the project cash flows*

$$90 / (1 + 0.1132)^1 + 90 / (1 + 0.1132)^2 + 90 / (1 + 0.1132)^3 = \$218,716$$

*And finally, calculate the project NPV by subtracting out the initial cash flow*

$$NPV = \$218,716 - \$200,000 = \$18,716$$

### References

**Question From:** Session 10 > Reading 36 > LOS a

**Related Material:**

- Key Concepts by LOS
- 

### Question #118 of 165

Question ID: 414789

A firm has \$4 million in outstanding bonds that mature in four years, with a fixed rate of 7.5% (assume annual payments). The bonds trade at a price of \$98 in the open market. The firm's marginal tax rate is 35%. Using the bond-yield plus method, what is the firm's cost of equity risk assuming an add-on of 4%?

- ☐ A) 11.50%.
- ☒ B) 12.11%.
- ☐ C) 13.34%.

#### Explanation

If the bonds are trading at \$98, the required yield is 8.11%, and the market value of the issue is \$3.92 million. To calculate this rate using a financial calculator (and figuring the rate assuming a \$100 face value for each bond),  $N = 4$ ;  $PMT = 7.5 = (0.075 \times 100)$ ;  $FV = 100$ ;  $PV = -98$ ;  $CPT \rightarrow I/Y = 8.11$ . By adding the equity risk factor of 4%, we compute the cost of equity as 12.11%.

#### References

**Question From:** Session 10 > Reading 36 > LOS h

**Related Material:**

- Key Concepts by LOS
- 

### Question #119 of 165

Question ID: 414700

Mason Webb makes the following statements to his boss, Laine DeWalt about the principles of capital budgeting.

Statement 1: Opportunity costs are not true cash outflows and should not be considered in a capital budgeting analysis.

Statement 2: Cash flows should be analyzed on an after-tax basis.

Should DeWalt agree or disagree with Webb's statements?

<u>Statement 1</u>	<u>Statement 2</u>
--------------------	--------------------

- |  |          |
|--|----------|
| <input checked="" type="radio"/> A) Disagree | Agree    |
| <input type="radio"/> B) Agree               | Agree    |
| <input type="radio"/> C) Disagree            | Disagree |

#### Explanation

DeWalt should disagree with Webb's first statement. Cash flows are based on opportunity costs. Any cash flows that the firm gives up because a project is undertaken should be charged to the project. DeWalt should agree with Webb's second statement. The impact of taxes must be considered when analyzing capital budgeting projects.

#### References

**Question From:** Session 10 > Reading 35 > LOS b

**Related Material:**

- Key Concepts by LOS

### Question #120 of 165

Question ID: 414754

A company has the following capital structure:

- Target weightings: 30% debt, 20% preferred stock, 50% common equity.
- Tax Rate: 35%.
- The firm can issue \$1,000 face value, 7% semi-annual coupon debt with a 15-year maturity for a price of \$1,047.46.
- A preferred stock issue that pays a dividend of \$2.80 has a value of \$35 per share.
- The company's growth rate is estimated at 6%.
- The company's common shares have a value of \$40 and a dividend in year 0 of  $D_0 = \$3.00$ .

The company's weighted average cost of capital is *closest* to:

- ✓ **A) 9.84%.**
- ✗ **B) 9.28%.**
- ✗ **C) 10.53%.**

#### Explanation

*Step 1: Determine the after-tax cost of debt:*

The *after-tax cost of debt* [ $k_d (1 - t)$ ] is used to compute the weighted average cost of capital. It is the interest rate on new debt ( $k_d$ ) less the tax savings due to the deductibility of interest ( $k_d t$ ).

Here, we are given the inputs needed to calculate  $k_d$ :  $N = 15 \times 2 = 30$ ;  $PMT = (1,000 \times 0.07) / 2 = 35$ ;  $FV = 1,000$ ;  $PV = -1,047.46$ ;  $CPT \rightarrow I = 3.25$ , multiply by 2 = 6.50%.

Thus,  $k_d (1 - t) = 6.50\% \times (1 - 0.35) = 4.22\%$

*Step 2: Determine the cost of preferred stock:*

Preferred stock is a perpetuity that pays a fixed dividend ( $D_{ps}$ ) forever. The *cost of preferred stock* ( $k_{ps}$ ) =  $D_{ps} / P$

where:  $D_{ps}$  = preferred dividends.

P = price

Here,  $k_{ps} = D_{ps} / P = \$2.80 / \$35 = 0.08$ , or 8.0%.

Step 3: Determine the cost of common equity:

$$k_{ce} = (D_1 / P_0) + g$$

where:  $D_1$  = Dividend in next year

$P_0$  = Current stock price

$g$  = Dividend growth rate

Here,  $D_1 = D_0 \times (1 + g) = \$3.00 \times (1 + 0.06) = \$3.18$ .

$k_{ce} = (3.18 / 40) + 0.06 = 0.1395$  or 13.95%.

Step 4: Calculate WACC:

$$WACC = (w_d)(k_d) + (w_{ps})(k_{ps}) + (w_{ce})(k_{ce})$$

where  $w_d$ ,  $w_{ps}$ , and  $w_{ce}$  are the weights used for debt, preferred stock, and common equity.

Here,  $WACC = (0.30 \times 4.22\%) + (0.20 \times 8.0\%) + (0.50 \times 13.95\%) = 9.84\%$ .

Note: Your calculation may differ slightly, depending on whether you carry all calculations in your calculator, or round to two decimals and then calculate.

#### References

**Question From:** Session 10 > Reading 36 > LOS a

#### **Related Material:**

- Key Concepts by LOS

## Question #121 of 165

Question ID: 683875

The stakeholders *most likely* to be concerned with their legal liabilities are:

- X **A)** regulators.
- X **B)** creditors.
- ✓ **C)** directors.

#### Explanation

Directors are legally responsible for their decisions and actions as board members. Neither regulators nor creditors face significant legal liabilities for their actions.

#### References

**Question From:** Session 10 > Reading 34 > LOS b

**Related Material:**

- Key Concepts by LOS
- 

### Question #122 of 165

Question ID: 414773

A new project is expected to be less risky than the average risk of existing projects. The appropriate discount rate to use when evaluating this project is:

- ☐ A) the firm's marginal cost of capital.
- ☒ B) less than the firm's marginal cost of capital.
- ☐ C) greater than the firm's marginal cost of capital.

#### Explanation

If the new project is less risky than the average risk of existing projects, the MCC should be adjusted downward. A lower discount rate will increase project's the net present value.

#### References

**Question From:** Session 10 > Reading 36 > LOS e

**Related Material:**

- Key Concepts by LOS
- 

### Question #123 of 165

Question ID: 414774

Which of the following is *most* accurate regarding the component costs and component weights in a firm's weighted average cost of capital (WACC)?

- ☒ A) Taxes reduce the cost of debt for firms in countries in which interest payments are tax deductible.
- ☐ B) The weights in the WACC should be based on the book values of the individual capital components.
- ☐ C) The appropriate pre-tax cost of a firm's new debt is the average coupon rate on the firm's existing debt.

#### Explanation

The after-tax cost of debt =  $k_d(1 - t) = k_d - k_d(t)$ , where  $k_d$  is the pretax cost of debt and  $t$  is the effective corporate tax rate. So the tax savings from the tax treatment of debt is  $k_d(t)$ . Capital component weights should be based on market weights, not book values. And, the appropriate pre-tax cost of debt is the yield to maturity on the firm's existing debt.

#### References

**Question From:** Session 10 > Reading 36 > LOS f

**Related Material:**

- Key Concepts by LOS
- 

### Question #124 of 165

Question ID: 414696

Which of the following types of capital budgeting projects are *most likely* to generate little to no revenue?

- ☐ A) New product or market development.
- ☐ B) Replacement projects to maintain the business.
- ☒ C) Regulatory projects.

#### Explanation

Mandatory regulatory or environmental projects may be required by a governmental agency or insurance company and typically involve safety-related or environmental concerns. The projects typically generate little to no revenue, but they accompany other new revenue producing projects and are accepted by the company in order to continue operating.

#### References

**Question From:** Session 10 > Reading 35 > LOS a

#### **Related Material:**

- Key Concepts by LOS
- 

### Question #125 of 165

Question ID: 434329

DeSoto Corp. 8% coupon bonds have a yield to maturity of 7.5%. The firm's tax rate is 30%. The after-tax cost of debt is *closest* to:

- ☒ A) 5.3%.
- ☐ B) 5.6%.
- ☐ C) 7.5%.

#### Explanation

$$7.5 \times (1 - 0.3) = 5.25\%.$$

#### References

**Question From:** Session 10 > Reading 36 > LOS f

#### **Related Material:**

- Key Concepts by LOS
- 

### Question #126 of 165

Question ID: 460662



An analyst gathered the following information about a capital budgeting project:

- The proposed project cost \$10,000.
- The project is expected to increase pretax net income and cash flow by \$3,000 in each of the next eight years.
- The company has 50% of its capital in equity at a cost of 12%.
- The pretax cost of debt capital is 6%.
- The company's tax rate is 33%.

The project's net present value is *closest to*:

X **A)** \$7,240.

X **B)** \$6,604.

✓ **C)** \$1,551.

#### Explanation

$$WACC = (w_d)(k_d)(1 - t) + (w_{ce})(k_{ce})$$

$$WACC = (0.5)(6\%)(1 - 0.33) + (0.5)(12\%) = 8.0\%$$

The increase in after-tax cash flows for each year is  $3,000 \times (1 - 0.33) = \$2,010$ .

$$I = 8; N = 8; PMT = \$2,010; CPT \rightarrow PV = \$11,550.74$$

$$NPV = PV \text{ income} - \text{cost} = \$11,550.74 - \$10,000 = \$1,550.74$$

#### References

**Question From:** Session 10 > Reading 36 > LOS a

#### **Related Material:**

- Key Concepts by LOS

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## Question #127 of 165

Question ID: 414788

A company has \$5 million in debt outstanding with a coupon rate of 12%. Currently the YTM on these bonds is 14%. If the tax rate is 40%, what is the after tax cost of debt?

X **A)** 7.2%.

✓ **B)** 8.4%.

X **C)** 5.6%.

#### Explanation

$$(0.14)(1 - 0.4)$$

#### References

**Question From:** Session 10 > Reading 36 > LOS h

#### **Related Material:**

- Key Concepts by LOS
- 

### Question #128 of 165

Question ID: 460659

A single independent project with a negative net present value has an initial cost of \$2.5 million and would generate cash inflows of \$1 million in each of the next three years. The discount rate the company used when evaluating this project is *closest* to:

- X A) 9%.
- X B) 8%.
- ✓ C) 10%.

#### Explanation

Given that the NPV is negative, the discount rate used by the company evaluating the project must be greater than the IRR (the discount rate for which the NPV equals zero). On a financial calculator:  $CF_0 = -2.5$ ;  $CF_j = 1$ ;  $N_j = 3$ ; CPT IRR = 9.7%. Since the discount rate used for this project is greater than 9.7%, it must be closer to 10% than to either of the other answer choices.

#### References

**Question From:** Session 10 > Reading 35 > LOS d

#### **Related Material:**

- Key Concepts by LOS
- 

### Question #129 of 165

Question ID: 434334

Utilitarian Co. is looking to expand its appliances division. It currently has a beta of 0.9, a D/E ratio of 2.5, a marginal tax rate of 30%, and its debt is currently yielding 7%. JF Black, Inc. is a publicly traded appliance firm with a beta of 0.7, a D/E ratio of 3, a marginal tax rate of 40%, and its debt is currently yielding 6.8%. The risk-free rate is currently 5% and the expected return on the market portfolio is 9%. Using this data, calculate Utilitarian's weighted average cost of capital for this potential expansion.

- X A) 4.2%.
- X B) 7.1%.
- ✓ C) 5.7%.

#### Explanation

$$\begin{aligned}\beta_{\text{JF Black asset}} &= 0.7 \left[ \frac{1}{1 + (1 - 0.40)3.0} \right] = 0.25 \\ \beta_{\text{Utilitarian project}} &= 0.25 [1 + (1 - 0.3)(2.5)] = 0.6875 \\ \text{project cost of equity} &= 5\% + 0.6875(9\% - 5\%) = 7.75\% \\ \text{WACC}_{\text{project}} &= \frac{1}{3.5}(7.75\%) + \frac{2.5}{3.5}(7\%)(1 - 0.3) = 5.71\%\end{aligned}$$

#### References

**Question From:** Session 10 > Reading 36 > LOS i

**Related Material:**

- Key Concepts by LOS
- 

**Question #130 of 165**

Question ID: 460666

The following information applies to World Turn Company:

- 10% rate of interest on newly issued bonds.
- 7% growth rate in earnings and dividends.
- The last dividend paid was \$0.93.
- Shares sell for \$16.
- Stock's beta is 1.5.
- Market risk premium is 6%.
- Risk-free rate of interest is 5%.
- The firm is in a 40% marginal tax bracket.

If the appropriate risk premium relative to the bond yield is 4%, World Turn's equity cost of capital using the dividend discount model is *closest to*:

- X **A)** 12.8%.
- X **B)** 14.0%.
- ✓ **C)** 13.2%.

Explanation

$$K_e = \frac{0.93(1.07)}{16} + 0.07 = 13.2\%$$

References

**Question From:** Session 10 > Reading 36 > LOS h

**Related Material:**

- Key Concepts by LOS
- 

**Question #131 of 165**

Question ID: 684025

Which of the following statements about corporate governance is most accurate? Corporate governance:

- X **A)** best practices are essentially the same in developed economies.
- X **B)** is defined in the same way in most countries.
- ✓ **C)** may be focused only on shareholder interests.

Explanation

Under the shareholder theory of corporate governance, practices are primarily those that support shareholder interests, while

under the stakeholder theory of corporate governance, the interests of various affected groups are considered and balanced. Corporate governance practices and definitions vary across countries.

#### References

**Question From:** Session 10 > Reading 34 > LOS a

**Related Material:**

- Key Concepts by LOS
- 

### Question #132 of 165

Question ID: 414732

For a project with cash outflows during its life, the least preferred capital budgeting tool would be:

- X **A)** net present value.
- ✓ **B)** internal rate of return.
- X **C)** profitability index.

#### Explanation

The IRR encounters difficulties when cash outflows occur throughout the life of the project. These projects may have multiple IRRs, or no IRR at all. Neither the NPV nor the PI suffer from these limitations.

#### References

**Question From:** Session 10 > Reading 35 > LOS e

**Related Material:**

- Key Concepts by LOS
- 

### Question #133 of 165

Question ID: 414814

Nippon Post Corporation (NPC), a Japanese software development firm, has a capital structure that is comprised of 60% common equity and 40% debt. In order to finance several capital projects, NPC will raise USD1.6 million by issuing common equity and debt in proportion to its current capital structure. The debt will be issued at par with a 9% coupon and flotation costs on the equity issue will be 3.5%. NPC's common stock is currently selling for USD21.40 per share, and its last dividend was USD1.80 and is expected to grow at 7% forever. The company's tax rate is 40%. NPC's WACC based on the cost of new capital is *closest* to:

- X **A)** 9.6%.
- X **B)** 13.1%.
- ✓ **C)** 11.8%.

#### Explanation

$$k_d = 0.09(1 - 0.4) = 0.054 = 5.4\%$$

$$K_{ce} = [(1.80 \times 1.07) / 21.40] + 0.07 = 0.16 = 16.0\%$$

$$WACC = 0.6(16.0\%) + 0.4(5.4\%) = 11.76\%$$

Flotation costs, treated correctly, have no effect on the cost of equity component of the WACC.

#### References

**Question From:** Session 10 > Reading 36 > LOS I

**Related Material:**

- Key Concepts by LOS
- 

### Question #134 of 165

Question ID: 414753

A company has the following information:

- A target capital structure of 40% debt and 60% equity.
- \$1,000 par value bonds pay 10% coupon (semi-annual payments), mature in 20 years, and sell for \$849.54.
- The company stock beta is 1.2.
- Risk-free rate is 10%, and market risk premium is 5%.
- The company's marginal tax rate is 40%.

The weighted average cost of capital (WACC) is closest to:

- X **A)** 13.5%.
- X **B)** 13.0%.
- ✓ **C)** 12.5%.

#### Explanation

$$K_s = 0.10 + (0.05)(1.2) = 0.16 \text{ or } 16\%$$

$$K_d = \text{Solve for } i: N = 40, PMT = 50, FV = 1,000, PV = -849.54, CPT I = 6 \times 2 = 12\%$$

$$WACC = (0.4)(12)(1 - 0.4) + (0.6)(16) = 2.88 + 9.6 = 12.48$$

#### References

**Question From:** Session 10 > Reading 36 > LOS a

**Related Material:**

- Key Concepts by LOS
- 

### Question #135 of 165

Question ID: 683879

A company's internal systems and practices for managing stakeholder relationships are *most accurately* described as its:

- X **A)** contractual infrastructure.
- ✓ **B)** organizational infrastructure.

X **C)** governance infrastructure.

#### Explanation

Organizational infrastructure is a company's corporate governance procedures and internal systems and practices for managing stakeholder relationships.

#### References

**Question From:** Session 10 > Reading 34 > LOS e

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #136 of 165**

Question ID: 414757

Hatch Corporation's target capital structure is 40% debt, 50% common stock, and 10% preferred stock. Information regarding the company's cost of capital can be summarized as follows:

- The company's bonds have a nominal yield to maturity of 7%.
- The company's preferred stock sells for \$40 a share and pays an annual dividend of \$4 a share.
- The company's common stock sells for \$25 a share and is expected to pay a dividend of \$2 a share at the end of the year (i.e.,  $D_1 = \$2.00$ ). The dividend is expected to grow at a constant rate of 7% a year.
- The company has no retained earnings.
- The company's tax rate is 40%.

What is the company's weighted average cost of capital (WACC)?

X **A)** 10.59%.

✓ **B)** 10.18%.

X **C)** 10.03%.

#### Explanation

$$WACC = (w_d)(k_d)(1 - t) + (w_{ps})(k_{ps}) + (w_{ce})(k_{ce})$$

where:

$$w_d = 0.40$$

$$w_{ce} = 0.50$$

$$w_{ps} = 0.10$$

$$k_d = 0.07$$

$$k_{ps} = D_{ps} / P = 4.00 / 40.00 = 0.10$$

$$k_{ce} = D_1 / P_0 + g = 2.00 / 25.00 + 0.07 = 0.08 + 0.07 = 0.15$$

$$WACC = (0.4)(0.07)(1 - 0.4) + (0.1)(0.10) + (0.5)(0.15) = 0.0168 + 0.01 + 0.075 = 0.1018 \text{ or } 10.18\%$$

#### References

**Question From:** Session 10 > Reading 36 > LOS a

**Related Material:**

- Key Concepts by LOS

### Question #137 of 165

Question ID: 414747

Given the following information about capital structure, compute the WACC. The marginal tax rate is 40%.

<i>Type of Capital</i>	<i>Percent of Capital Structure</i>	<i>Before-Tax Component Cost</i>
Bonds	40%	7.5%
Preferred Stock	5%	11.0%
Common Stock	55%	15.0%

- X **A)** 7.1%.
- ✓ **B)** 10.6%.
- X **C)** 13.3%.

#### Explanation

$$WACC = (W_d)(K_d(1 - t)) + (W_{ps})(K_{ps}) + (W_{ce})(K_s)$$

$$WACC = 0.4(7.5\%)(1 - 0.4) + 0.05(11\%) + 0.55(15\%) = 10.6\%.$$

#### References

**Question From:** Session 10 > Reading 36 > LOS a

**Related Material:**

- Key Concepts by LOS

### Question #138 of 165

Question ID: 414741

Garner Corporation is investing \$30 million in new capital equipment. The present value of future after-tax cash flows generated by the equipment is estimated to be \$50 million. Currently, Garner has a stock price of \$28.00 per share with 8 million shares outstanding. Assuming that this project represents new information and is independent of other expectations about the company, what should the effect of the project be on the firm's stock price?

- X **A)** The stock price will increase to \$34.25.
- X **B)** The stock price will remain unchanged.
- ✓ **C)** The stock price will increase to \$30.50.

### Explanation

In theory, a positive NPV project should provide an increase in the value of a firm's shares.

NPV of new capital equipment = \$50 million - \$30 million = \$20 million

Value of company prior to equipment purchase = 8,000,000 × \$28.00 = \$224,000,000

Value of company after new equipment project = \$224 million + \$20 million = \$244 million

Price per share after new equipment project = \$244 million / 8 million = \$30.50

Note that in reality, changes in stock prices result from changes in expectations more than changes in NPV.

### References

**Question From:** Session 10 > Reading 35 > LOS f

#### **Related Material:**

- Key Concepts by LOS
- 

## **Question #139 of 165**

Question ID: 414695

Which of the following steps is *least likely* to be an administrative step in the capital budgeting process?

- X **A)** Forecasting cash flows and analyzing project profitability.
- X **B)** Conducting a post-audit to identify errors in the forecasting process.
- ✓ **C)** Arranging financing for capital projects.

### Explanation

Arranging financing is not one of the administrative steps in the capital budgeting process. The four administrative steps in the capital budgeting process are:

1. Idea generation
2. Analyzing project proposals
3. Creating the firm-wide capital budget
4. Monitoring decisions and conducting a post-audit

### References

**Question From:** Session 10 > Reading 35 > LOS a

#### **Related Material:**

- Key Concepts by LOS
- 

## **Question #140 of 165**

Question ID: 414708

Lincoln Coal is planning a new coal mine, which will cost \$430,000 to build, with the expenditure occurring next year. The mine will bring cash inflows of \$200,000 annually over the subsequent seven years. It will then cost \$170,000 to close down the mine over the following year. Assume all cash flows occur at the end of the year. Alternatively, Lincoln Coal may choose to sell the site



today. What minimum price should Lincoln set on the property, given a 16% required rate of return?

- ✓ **A)** \$280,913.
- X **B)** \$325,859.
- X **C)** \$376,872.

#### Explanation

The key to this problem is identifying this as a NPV problem even though the first cash flow will not occur until the following year. Next, the year of each cash flow must be properly identified; specifically:  $CF_0 = \$0$ ;  $CF_1 = -430,000$ ;  $CF_{2-8} = +\$200,000$ ;  $CF_9 = -\$170,000$ . One simply has to discount all of the cash flows to today at a 16% rate. NPV = \$280,913.

#### References

**Question From:** Session 10 > Reading 35 > LOS d

#### **Related Material:**

- Key Concepts by LOS

## Question #141 of 165

Question ID: 414763

Deighton Industries has 200,000 bonds outstanding. The par value of each corporate bond is \$1,000, and the current market price of the bonds is \$965. Deighton also has 6 million common shares outstanding, with a book value of \$35 per share and a market price of \$28 per share. At a recent board of directors meeting, Deighton board members decided not to change the company's capital structure in a material way for the future. To calculate the weighted average cost of Deighton's capital, what weights should be assigned to debt and to equity?

	<u>Debt</u>	<u>Equity</u>
X <b>A)</b>	56.55%	43.45%
X <b>B)</b>	48.85%	51.15%
✓ <b>C)</b>	53.46%	46.54%

#### Explanation

In order to calculate the weighted average cost of capital (WACC), market value weights should be used.

For the bonds =  $200,000 \times \$965 = \$193,000,000$

For the stocks =  $6,000,000 \times \$28 = \$168,000,000$

$\$361,000,000$

The weight of debt would be:  $193,000,000 / 361,000,000 = 0.5346 = 53.46\%$

The weight of common stock would be:  $168,000,000 / 361,000,000 = 0.4654 = 46.54\%$

#### References

**Question From:** Session 10 > Reading 36 > LOS c

**Related Material:**

- Key Concepts by LOS
- 

**Question #142 of 165**

Question ID: 414775

Ferryville Radar Technologies has five-year, 7.5% notes outstanding that trade at a yield to maturity of 6.8%. The company's marginal tax rate is 35%. Ferryville plans to issue new five-year notes to finance an expansion. Ferryville's cost of debt capital is *closest to*:

- ☐ A) 2.4%.
- ☒ B) 4.4%.
- ☐ C) 4.9%.

Explanation

Ferryville's cost of debt capital is  $k_d(1 - t) = 6.8\% \times (1 - 0.35) = 4.42\%$ . Note that the before-tax cost of debt is the yield to maturity on the company's outstanding notes, not their coupon rate. If the expected yield on new par debt were known, we would use that. Since it is not, the yield to maturity on existing debt is the best approximation.

References

**Question From:** Session 10 > Reading 36 > LOS f

**Related Material:**

- Key Concepts by LOS
- 

**Question #143 of 165**

Question ID: 414787

The expected annual dividend one year from today is \$2.50 for a share of stock priced at \$25. What is the cost of equity if the constant long-term growth in dividends is projected to be 8%?

- ☐ A) 19%.
- ☒ B) 18%.
- ☐ C) 15%.

Explanation

$K_s = (D_1 / P_0) + g = (2.5/25) + 0.08 = 0.18$  or 18%.

References

**Question From:** Session 10 > Reading 36 > LOS h

**Related Material:**

- Key Concepts by LOS
-

## Question #144 of 165

Question ID: 414765

Hans Klein, CFA, is responsible for capital projects at Vertex Corporation. Klein and his assistant, Karl Schwartz, were discussing various issues about capital budgeting and Schwartz made a comment that Klein believed to be incorrect. Which of the following is *most likely* the *incorrect* statement made by Schwartz?

- ✓ **A)** "Net present value (NPV) and internal rate of return (IRR) result in the same rankings of potential capital projects."
- ✗ **B)** "It is not always appropriate to use the firm's marginal cost of capital when determining the net present value of a capital project."
- ✗ **C)** "The weighted average cost of capital (WACC) should be based on market values for the firm's outstanding securities."

### Explanation

It is possible that the NPV and IRR methods will give different rankings. This often occurs when there is a significant difference in the timing of the cash flows between two projects. A firm's marginal cost of capital, or WACC, is only appropriate for computing a project's NPV if the project has the same risk as the firm.

### References

**Question From:** Session 10 > Reading 36 > LOS c

### **Related Material:**

- Key Concepts by LOS
- 

## Question #145 of 165

Question ID: 414723

Which of the following is the *most* appropriate decision rule for mutually exclusive projects?

- ✗ **A)** Accept both projects if their internal rates of return exceed the firm's hurdle rate.
- ✗ **B)** If the net present value method and the internal rate of return method give conflicting signals, select the project with the highest internal rate of return.
- ✓ **C)** Accept the project with the highest net present value, subject to the condition that its net present value is greater than zero.

### Explanation

The project that maximizes the firm's value is the one that has the highest positive NPV.

### References

**Question From:** Session 10 > Reading 35 > LOS e

### **Related Material:**

- Key Concepts by LOS
-

## Question #146 of 165

Question ID: 414709

Which of the following statements about the discounted payback period is *least* accurate? The discounted payback:

- ✓ **A)** period is generally shorter than the regular payback.
- X **B)** method can give conflicting results with the NPV.
- X **C)** frequently ignores terminal values.

### Explanation

The discounted payback period calculates the present value of the future cash flows. Because these present values will be less than the actual cash flows it will take a longer time period to recover the original investment amount.

### References

**Question From:** Session 10 > Reading 35 > LOS d

### **Related Material:**

- Key Concepts by LOS

## Question #147 of 165

Question ID: 414764

Agora Systems Inc. has the following capital structure and cost of new capital:

	<i>Book Value</i>	<i>Market Value</i>	<i>Cost of Issuing</i>
Debt	\$50 million	\$58 million	5.3%
Preferred stock	\$25 million	\$28 million	7.2%
Common stock	\$200 million	\$525 million	8.0%
Total capital	\$275 million	\$611 million	

What is Agora's weighted-average cost of capital if its marginal tax rate is 40%?

- X **A)** 8.02%.
- ✓ **B)** 7.50%.
- X **C)** 6.23%.

### Explanation

$$WACC = (1 - t) (r_d) (D \div A) + (r_p) (P/A) + (r_{ce}) (E \div A)$$

$$WACC = (1 - 0.4) (0.053) (58 \div 611) + (0.072) (28 \div 611) + (0.08) (525 \div 611)$$

$$WACC = 0.003 + 0.0033 + 0.0687$$

$$WACC = 7.50\%$$

### References

**Question From:** Session 10 > Reading 36 > LOS c

**Related Material:**

- Key Concepts by LOS
- 

**Question #148 of 165**

Question ID: 414803

Stolzenbach Technologies has a target capital structure of 60% equity and 40% debt. The schedule of financing costs for the Stolzenbach is shown in the table below:

Amount of New Debt (in millions) After-tax Cost of Debt Amount of New Equity (in millions) Cost of Equity

\$0 to \$199	4.5%	\$0 to \$299	7.5%
\$200 to \$399	5.0%	\$300 to \$699	8.5%
\$400 to \$599	5.5%	\$700 to \$999	9.5%

Stolzenbach Technologies has breakpoints for raising additional financing at both:

- X **A)** \$400 million and \$700 million.
- X **B)** \$500 million and \$700 million.
- ✓ **C)** \$500 million and \$1,000 million.

**Explanation**

Stolzenbach will have a break point each time a component cost of capital changes, for a total of three marginal cost of capital schedule breakpoints.

Break point<sub>Debt > \$200mm</sub> = (\$200 million ÷ 0.4) = \$500 million

Break point<sub>Debt > \$400mm</sub> = (\$400 million ÷ 0.4) = \$1,000 million

Break point<sub>Equity > \$300mm</sub> = (\$300 million ÷ 0.6) = \$500 million

Break point<sub>Equity > \$700mm</sub> = (\$700 million ÷ 0.6) = \$1,167 million

**References**

**Question From:** Session 10 > Reading 36 > LOS k

**Related Material:**

- Key Concepts by LOS
- 

**Question #149 of 165**

Question ID: 434333

Degen Company is considering a project in the commercial printing business. Its debt currently has a yield of 12%. Degen has a leverage ratio of 2.3 and a marginal tax rate of 30%. Hodgkins Inc., a publicly traded firm that operates only in the commercial printing business, has a marginal tax rate of 25%, a debt-to-equity ratio of 2.0, and an equity beta of 1.3. The risk-free rate is 3% and the expected return on the market portfolio is 9%. The appropriate WACC to use in evaluating Degen's project is *closest to*:

- X **A)** 8.9%.
- X **B)** 9.2%.
- ✓ **C)** 8.6%.

#### Explanation

Hodgkins' asset beta:

$$\beta_{\text{ASSET}} = 1.3 \left[ \frac{1}{1 + (1 - 0.25)(2.0)} \right] = 0.52$$

We are given Degen's leverage ratio (assets-to-equity) as equal to 2.3. If we assign the value of 1 to equity ( $A/E = 2.3/1$ ), then debt (and the debt-to-equity ratio) must be  $2.3 - 1 = 1.3$ .

Equity beta for the project:

$$\beta_{\text{PROJECT}} = 0.52[1 + (1 - 0.3)(1.3)] = 0.9932$$

$$\text{Project cost of equity} = 3\% + 0.9932(9\% - 3\%) = 8.96\%$$

Degen's capital structure weight for debt is  $1.3/2.3 = 56.5\%$ , and its weight for equity is  $1/2.3 = 43.5\%$ .

The appropriate WACC for the project is therefore:

$$0.565(12\%)(1 - 0.3) + 0.435(8.96\%) = 8.64\%.$$

#### References

**Question From:** Session 10 > Reading 36 > LOS i

#### **Related Material:**

- Key Concepts by LOS

## **Question #150 of 165**

Question ID: 414759

A firm is planning a \$25 million expansion project. The project will be financed with \$10 million in debt and \$15 million in equity stock (equal to the company's current capital structure). The before-tax required return on debt is 10% and 15% for equity. If the company is in the 35% tax bracket, what cost of capital should the firm use to determine the project's net present value (NPV)?

- ✓ **A)** 11.6%.
- X **B)** 9.6%.
- X **C)** 12.5%.

#### Explanation

$$\text{WACC} = (E / V)(R_E) + (D / V)(R_D)(1 - TC)$$

$$\text{WACC} = (15 / 25)(0.15) + (10 / 25)(0.10)(1 - 0.35) = 0.09 + 0.026 = 0.116 \text{ or } 11.6\%$$

#### References

**Question From:** Session 10 > Reading 36 > LOS a

**Related Material:**

- Key Concepts by LOS
- 

**Question #151 of 165**

Question ID: 460660

In a net present value (NPV) profile, the internal rate of return is represented as the:

- ☐ A) point where two NPV profiles intersect.
- ☒ B) intersection of the NPV profile with the horizontal axis.
- ☐ C) intersection of the NPV profile with the vertical axis.

Explanation

The internal rate of return is the rate of discount at which the NPV of a project is zero. On an NPV profile, this is the point where the profile intersects the horizontal axis.

References

**Question From:** Session 10 > Reading 35 > LOS e

**Related Material:**

- Key Concepts by LOS
- 

**Question #152 of 165**

Question ID: 683885

Shareholders who use their share voting power or other means to pressure companies to make changes they believe will increase shareholder value are *most accurately* described as:

- ☒ A) activist shareholders.
- ☐ B) proxy shareholders.
- ☐ C) ESG shareholders.

Explanation

Activist shareholders seek changes in company operations that they believe will increase shareholder value.

References

**Question From:** Session 10 > Reading 34 > LOS g

**Related Material:**

- Key Concepts by LOS
- 

**Question #153 of 165**

Question ID: 434324

Lane Industries has a project with the following cash flows:

Year	Cash Flow
0	-\$200,000
1	60,000
2	80,000
3	70,000
4	60,000
5	50,000

The project's cost of capital is 12%. The discounted payback period is *closest* to:

- ✓ **A) 3.9 years.**
- X **B) 2.9 years.**
- X **C) 3.4 years.**

#### Explanation

The discounted payback period method discounts the estimated cash flows by the project's cost of capital and then calculates the time needed to recover the investment.

Year	Cash Flow	Discounted Cash Flow	Cumulative Discounted Cash Flow
0	-\$200,000	-\$200,000.00	-\$200,000.00
1	60,000	53,571.43	-146,428.57
2	80,000	63,775.51	-82,653.06
3	70,000	49,824.62	-32,828.44
4	60,000	38,131.08	5,302.64
5	50,000	28,371.30	33,673.98

discounted payback period = number of years until the year before full recovery +  $\frac{\text{unrecovered cost at the start of the last year}}{\text{discounted cash flow during the last year}}$

$$\text{Discounted payback} = 3 + \frac{32,828.44}{38,131.08} = 3.86 \text{ years}$$

#### References

**Question From:** Session 10 > Reading 35 > LOS d

#### **Related Material:**

- Key Concepts by LOS

## **Question #154 of 165**

Question ID: 414724

Which of the following statements about independent projects is *least* accurate?



- X **A)** The net present value indicates how much the value of the firm will change if the project is accepted.
- X **B)** If the internal rate of return is less than the cost of capital, reject the project.
- ✓ **C)** The internal rate of return and net present value methods can yield different accept/reject decisions for independent projects.

#### Explanation

For independent projects the IRR and NPV give the same accept/reject decision. For mutually exclusive projects the IRR and NPV techniques can yield different accept/reject decisions.

#### References

**Question From:** Session 10 > Reading 35 > LOS e

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #155 of 165**

Question ID: 414742

The effect of a company announcement that they have begun a project with a current cost of \$10 million that will generate future cash flows with a present value of \$20 million is *most likely* to:

- X **A)** increase value of the firm's common shares by \$10 million.
- X **B)** increase the value of the firm's common shares by \$20 million.
- ✓ **C)** only affect value of the firm's common shares if the project was unexpected.

#### Explanation

Stock prices reflect investor expectations for future investment and growth. A new positive-NPV project will increase stock price only if it was not previously anticipated by investors.

#### References

**Question From:** Session 10 > Reading 35 > LOS f

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #156 of 165**

Question ID: 683870

The stakeholder theory of corporate governance is primarily focused on:

- X **A)** increasing the value a company.
- ✓ **B)** resolving the competing interests of those who manage companies and other groups affected by a company's actions.

X **C)** the interests of various stakeholders rather than the interests of shareholders.

#### Explanation

Resolving the conflicting interests of both shareholders and other stakeholders is the focus of corporate governance under stakeholder theory. Shareholders are among the groups whose interests are considered under stakeholder theory.

#### References

**Question From:** Session 10 > Reading 34 > LOS a

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #157 of 165**

Question ID: 414780

The after-tax cost of preferred stock is always:

- X **A)** less than the before-tax cost of preferred stock.
- X **B)** higher than the cost of common shares.
- ✓ **C)** equal to the before-tax cost of preferred stock.

#### Explanation

The after-tax cost of preferred stock is equal to the before-tax cost of preferred stock, because preferred stock dividends are not tax deductible. The cost of preferred shares is usually higher than the cost of debt, but less than the cost of common shares.

#### References

**Question From:** Session 10 > Reading 36 > LOS g

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #158 of 165**

Question ID: 414740

When using net present value (NPV) profiles:

- X **A)** one should accept all mutually exclusive projects with positive NPVs.
- X **B)** the NPV profile's intersection with the vertical y-axis identifies the project's internal rate of return.
- ✓ **C)** one should accept all independent projects with positive NPVs.

#### Explanation

Where the NPV intersects the vertical y-axis you have the value of the cash inflows less the cash outflows, assuming an absence of money having a time value (i.e., the discount rate is zero). Where the NPV intersects the *horizontal x-axis* you have the project's internal rate of return. At this cost of financing, the cash inflows and cash outflows offset each other. The NPV profile is a

tool that graphically plots the project's NPV as calculated using different discount rates. Assuming an appropriate discount rate, one should accept all projects with positive net present values, if the projects are independent. If projects are mutually exclusive select the one with the higher NPV at any given level of the cost of capital.

#### References

**Question From:** Session 10 > Reading 35 > LOS e

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #159 of 165**

Question ID: 683873

The stakeholder group that typically prefers the greatest amount of business risk is:

- X **A)** senior managers.
- X **B)** directors.
- ✓ **C)** shareholders.

#### Explanation

Compared to the other two groups, shareholders have the greatest potential gains from riskier strategies and can diversify their holdings across firms in order to reduce the influence of company specific risk. While senior managers can gain from company outperformance, they typically prefer less risk than shareholders because managers' risk of poor company performance on the value of their options and on their careers cannot be easily diversified away.

#### References

**Question From:** Session 10 > Reading 34 > LOS b

#### **Related Material:**

- Key Concepts by LOS
- 

### **Question #160 of 165**

Question ID: 683888

Sustainable investing is *most accurately* described as:

- X **A)** excluding companies in carbon production based industries from consideration for investment.
- ✓ **B)** integrating environmental and social considerations into the investment decision making process.
- X **C)** investing only in companies that promote environmental or social initiatives favored by an investor.

#### Explanation

Sustainable investing is another name for ESG integration, which is using environmental, social, and governance factors when making investment decisions.

#### References

**Question From:** Session 10 > Reading 34 > LOS j

**Related Material:**

- Key Concepts by LOS
- 

### Question #161 of 165

Question ID: 414799

Tony Costa, operations manager of BioChem Inc., is exploring a proposed product line expansion. Costa explains that he estimates the beta for the project by seeking out a publicly traded firm that is engaged exclusively in the same business as the proposed BioChem product line expansion. The beta of the proposed project is estimated from the beta of that firm after appropriate adjustments for capital structure differences. The method that Costa uses is known as the:

- X **A)** build-up method.
- ✓ **B)** pure-play method.
- X **C)** accounting method.

#### Explanation

The method used by Costa is known as the pure-play method. The method entails selection of the pure-play equity beta, unlevering it using the pure-play company's capital structure, and re-levering using the subject company's capital structure.

#### References

**Question From:** Session 10 > Reading 36 > LOS i

**Related Material:**

- Key Concepts by LOS
- 

### Question #162 of 165

Question ID: 414806

Which one of the following statements about the marginal cost of capital (MCC) is *most* accurate?

- X **A)** The MCC falls as more and more capital is raised in a given period.
- X **B)** The MCC is the cost of the last dollar obtained from bondholders.
- ✓ **C)** A breakpoint on the MCC curve occurs when one of the components in the weighted average cost of capital changes in cost.

#### Explanation

A breakpoint is calculated by dividing the amount of capital at which a component's cost of capital changes by the weight of that component in the capital structure.

The marginal cost of capital (MCC) is defined as the weighted average cost of the last dollar raised by the company. Typically, the marginal cost of capital will *increase* as more capital is raised by the firm. The marginal cost of capital is the weighted average rate across all sources of long-term financings—bonds, preferred stock, and common stock—when the final dollar was obtained, regardless of its specific source.

## References

**Question From:** Session 10 > Reading 36 > LOS k

### **Related Material:**

- Key Concepts by LOS
- 

## **Question #163 of 165**

Question ID: 414770

The optimal capital budget is the amount of capital determined by the:

- X **A)** point of tangency between the marginal cost of capital curve and the investment opportunity schedule.
- X **B)** downward sloping marginal cost of capital curve's intersection with a upward sloping investment opportunity schedule.
- ✓ **C)** upward sloping marginal cost of capital curve's intersection with a downward sloping investment opportunity schedule.

### Explanation

The marginal cost of capital increases as additional capital is raised, which means the curve is upward sloping. The investment opportunity schedule slopes downward, representing the diminishing returns of additional capital invested. The point where the two curves intersect is the firm's optimal capital budget, the amount of capital that will finance all the projects that have positive net present values.

## References

**Question From:** Session 10 > Reading 36 > LOS d

### **Related Material:**

- Key Concepts by LOS
- 

## **Question #164 of 165**

Question ID: 414756

Ravencroft Supplies is estimating its weighted average cost of capital (WACC). Ravencroft's optimal capital structure includes 10% preferred stock, 30% debt, and 60% equity. They can sell additional bonds at a rate of 8%. The cost of issuing new preferred stock is 12%. The firm can issue new shares of common stock at a cost of 14.5%. The firm's marginal tax rate is 35%. Ravencroft's WACC is *closest* to:

- X **A)** 13.3%.
- ✓ **B)** 11.5%.
- X **C)** 12.3%.

### Explanation

$$0.10(12\%) + 0.30(8\%)(1 - 0.35) + 0.6(14.5\%) = 11.46\%.$$

#### References

**Question From:** Session 10 > Reading 36 > LOS a

**Related Material:**

- Key Concepts by LOS
- 

### Question #165 of 165

Question ID: 414702

If two projects are mutually exclusive, a company:

- ✓ **A)** can accept either project, but not both projects.
- X **B)** must accept both projects or reject both projects.
- X **C)** can accept one of the projects, both projects, or neither project.

#### Explanation

Mutually exclusive means that out of the set of possible projects, only one project can be selected. Given two mutually exclusive projects, the company can accept one of the projects or reject both projects, but cannot accept both projects.

#### References

**Question From:** Session 10 > Reading 35 > LOS c

**Related Material:**

- Key Concepts by LOS