

Question #1 of 42

Question ID: 1458036

Nelson, Inc. has fixed financing costs of \$3 million, fixed operating costs of \$5 million, and variable costs of \$2.00 per unit. If the price of Nelson's product is \$4.00, Nelson's operating breakeven quantity of sales is:

- A) 1.0 million units.
- B) 2.5 million units.
- C) 4.0 million units.



Explanation

Operating breakeven quantity = fixed operating costs / (price – variable cost per unit) = \$5 million / (\$4.00 – \$2.00) = 2,500,000 units.

(Module 35.1, LOS 35.e)

Question #2 of 42

Question ID: 1458010

As financial leverage increases, what will be the impact on the expected rate of return and financial risk?

- A) Both will rise.
- B) One will rise while the other falls.
- C) Both will fall.



Explanation

A higher breakeven point resulting from increased interest costs associated with debt financing increases the risk of the company. Since the risk is tied to firm financing, it is referred to as financial risk. Given the positive risk-return relationship, the expected return of the company's common stock also rises.

(Module 35.1, LOS 35.b)

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Question ID: 1458031

Jayco, Inc., sells blue ink for \$4.00 a bottle. The ink's variable cost per bottle is \$2.00. Ink has fixed cost of \$10,000. What is Jayco's breakeven point in units?

- A) 6,000.
- B) 5,000.
- C) 2,500.



Explanation

The breakeven quantity of sales is the number of units at which the contribution margin (price minus variable cost to produce a unit) from the quantity a firm sells just covers its fixed costs.

$$Q_{BE} = \text{fixed costs} / (\text{price} - \text{variable cost per unit})$$

$$Q_{BE} = 10,000 / (4.00 - 2.00) = 5,000$$

(Module 35.1, LOS 35.d)

Question #4 of 42

Question ID: 1462865

With sales of \$45 million, the operating earnings of Poston Industries are \$3.8 million. Fixed operating costs are \$4.2 million, net profit margin is 4.5%, and unit variable costs are \$35.50. At the current level of sales, Poston's degree of operating leverage is *closest* to:

A) 1.2.



B) 1.6.



C) 2.1.



Explanation

Operating earnings = EBIT = Sales – TVC – Fixed operating costs

$$DOL = \frac{\text{Sales} - \text{TVC}}{\text{Sales} - \text{TVC} - \text{Fixed operating costs}} = \frac{\text{EBIT} + \text{Fixed operating costs}}{\text{EBIT}} = \frac{3.8 + 4.2}{3.8} = 2$$

(Module 35.1, LOS 35.b)

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Question ID: 1458019

FCO, Inc. (FCO) is comparing EBIT forecasts to help determine the impact its capital structure has on net income.

	Expected EBIT	EBIT + 10%
EBIT	\$80,000	\$88,000
Interest expense	<u>15,000</u>	<u>15,000</u>
EBT	65,000	73,000
Taxes	<u>26,000</u>	<u>29,200</u>
Net income	39,000	43,800
Liabilities	200,000	
Shareholder equity	250,000	
Return on equity	15.60%	

FCO's degree of financial leverage is *closest* to:

- A) 1.25.
- B) 0.80.
- C) 0.60.



Explanation

The degree of financial leverage (DFL) is interpreted as the ratio of the percentage change in net income to the percentage change in EBIT. FCO can compare two EBIT forecasts to determine how net income is being driven by financial leverage.

$$DFL = \frac{(NI_1 - NI_0) / NI_0}{(EBIT_1 - EBIT_0) / EBIT_0}$$

$$DFL = \frac{(43,800 - 39,000) / 39,000}{(88,000 - 80,000) / 80,000} = \frac{0.123}{0.100} = 1.23$$

(Module 35.1, LOS 35.b)

Question #6 of 42

Question ID: 1462866

For a profitable company, issuing debt in order to retire common stock will *most likely*:

- A) decrease both operating income and net income.
- B) increase both the level and variability of return on equity.
- C) increase both net income and return on equity.






Explanation

An increase in debt will increase interest expense, which will decrease net income but not operating income, which is calculated before subtracting interest expense. For a profitable firm, the decrease in net income will be offset by the decrease in equity from the repurchase of common stock, so that ROE increases. The effect of the increase in financial leverage will, however, increase the variability of ROE for a given change in operating earnings. (Module 35.1, LOS 35.c)

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Question ID: 1457997

All else equal, a firm's business risk is higher when:

- A) the firm has low operating leverage. 
- B) fixed costs are the highest portion of its expense. 
- C) variable costs are the highest portion of its expense. 

Explanation




The higher the percentage of a firm's costs that are fixed, the higher the operating leverage, and the greater the firm's business risk and the more susceptible it is to business cycle fluctuations.

(Module 35.1, LOS 35.a)

Question #8 of 42

Question ID: 1458025

Which of the following statements regarding the impact of financial leverage on a company's net income and return on equity (ROE) is *most accurate*?

- A) Using financial leverage increases the volatility of ROE for a level of volatility in operating income. 
- B) If a firm has a positive operating profit margin, using financial leverage will always increase ROE. 
- C) Increasing financial leverage increases both risk and potential return of existing bondholders. 

Explanation

If a firm is financed with 100% equity, there is a direct relationship between changes in the firm's ROE and changes in operating income. Adding financial leverage (debt) to the firm's capital structure will cause ROE to become much more volatile and ROE will change more rapidly for a given change in operating income. The increased volatility in ROE reflects an increase in both risk and potential return for equity holders. Note that financial leverage results in increased default risk, but since existing bond holders are compensated by coupon interest and return of principal, their potential return is unchanged. Although financial leverage will generally increase ROE if a firm has a positive operating margin (EBIT/Sales), if the operating margin were small, the added interest expense could turn the firm's net profit margin negative, which would in turn make ROE negative.

(Module 35.1, LOS 35.c)

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Question ID: 1458020

Given the following information on the annual operating results for ArtFrames, a producer of quality metal picture frames:

- Sales of \$3,500,000.
- Variable costs at 45% of sales.
- Fixed costs of \$1,050,000.
- Debt interest payments on \$750,000 issued at par with an annual 9.0% coupon; market yield is currently 7.0%.

ArtFrames's degree of operating leverage (DOL) and degree of financial leverage (DFL) are *closest to*:

	<u>DOL</u>	<u>DFL</u>	
A)	2.20	1.50	✗
B)	2.20	1.08	✓
C)	3.00	1.50	✗

Explanation

$DOL = (\text{sales} - \text{variable costs}) / (\text{sales} - \text{variable costs} - \text{fixed costs})$

Variable costs = \$3,500,000 × 45% = \$1,575,000

Fixed costs = \$1,050,000

$$DOL = (\$3,500,000 - \$1,575,000) / (\$3,500,000 - \$1,575,000 - \$1,050,000) = 2.20$$

$DFL = EBIT / (EBIT - \text{interest})$

Interest = \$750,000 × 9% = \$67,500

EBIT = sales – variable costs – fixed costs = \$3,500,000 – \$1,575,000 – \$1,050,000 = \$875,000

$$DFL = \$875,000 / (\$875,000 - \$67,500) = 1.08$$

(Module 35.1, LOS 35.b)

Question #10 of 42

Question ID: 1462869

In the last period, Foster Insold 20,000 units at \$31 per unit. Fixed costs were \$180,000 and variable costs were \$310,000. In the current period, Foster sold 25,000 units. If Foster's variable cost per unit and fixed costs remained unchanged, it would report income for the current period of:

- A) \$130,500.
- B) \$157,000.
- C) \$207,500.

**Explanation**

Income = $31 \times 25,000 - 180,000 - (25/20) \times 310,000 = 207,500$. (Module 35.1, LOS 35.d)

Question #11 of 42

Question ID: 1458013

The following information reflects the projected operating results for Opstalan, a catalog printer.

- Sales = \$5.0 million.
- Variable Costs = 40% of sales.
- Fixed Costs = \$1.0 million.
- Interest expense = \$105,000.
- Tax Rate = 0.0%.

Opstalan's degree of total leverage (DTL) is *closest* to:

- A) 1.41.
- B) 2.58.
- C) 1.59.

**Explanation**

First, calculate the operating results:

Opstalan Annual Operating Results	
Sales	\$5,000,000
– Variable Costs ¹	<u>2,000,000</u>
Contribution Margin	3,000,000
– Fixed Costs	<u>1,000,000</u>
EBIT	<u>2,000,000</u>
– Interest Expense	<u>105,000</u>
EBT = Earnings	1,895,000

¹Variable costs = $0.40 \times 5,000,000$

Second, calculate $DOL = (Sales - Variable Costs) / (Sales - Variable Costs - Fixed Costs) = 3,000,000 / 2,000,000 = 1.50$

Third, calculate $DFL = EBIT / (EBIT - I) = 2,000,000 / 1,895,000 = 1.06$.




Finally, calculate $DTL = DOL \times DFL = 1.50 \times 1.06 = 1.59$.

(Module 35.1, LOS 35.b)

Question #12 of 42

Question ID: 1458018

Which of the following *best* describes a firm with low operating leverage? A large change in:

- A) the number of units a firm produces and sells result in a similar change in the firm's earnings before interest and taxes. 
- B) earnings before interest and taxes result in a small change in net income. 
- C) sales result in a small change in net income. 

Explanation

Operating leverage is the result of a greater proportion of fixed costs compared to variable costs in a firm's capital structure and is characterized by the sensitivity in operating income (earnings before interest and taxes) to change in sales. A firm that has equal changes in sales and operating income would have low operating leverage (the least it can be is one). Note that the relationship between operating income and net income is impacted by the degree of financial leverage, and the relationship between sales and net income is impacted by the degree of total leverage.

(Module 35.1, LOS 35.b)

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Question ID: 1458014

Stromburg Corporation's sales are \$75,000,000. Fixed costs, including research and development, are \$40,000,000, while variable costs amount to 30% of sales. Stromburg plans an expansion which will generate additional fixed costs of \$15,000,000, decrease variable costs to 25% of sales, and permit sales to increase to \$100,000,000. What is Stromburg's degree of operating leverage at the new projected sales level?

A) 3.50.



B) 3.75.



C) 4.20.



Explanation

Sales = \$100,000,000

VC of 25% of sales = 25,000,000

FC of 40,000,000 + 15,000,000 = 55,000,000

DOL= $[100,000,000 - 25,000,000] / [100,000,000 - 25,000,000 - 55,000,000] = 3.75$

(Module 35.1, LOS 35.b)

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Question ID: 1458030

Annual fixed costs at King Mattress amount to \$325,000. The variable cost of raw materials and labor is \$120 for the typical mattress. Sales prices for mattresses average \$160. How many units must King Mattress sell to break even?

A) 8,125.



B) 2,708.



C) 40.



Explanation

At the breakeven quantity of sales, the contribution margin (price minus variable cost to produce a unit) from the quantity a firm sells just covers its fixed costs: $Q_{\text{Breakeven}} \times (\text{Price} - \text{Variable Cost}) = \text{Fixed Cost}$.

Therefore:

$Q_{\text{Breakeven}} = \text{Fixed Cost} / (\text{Price} - \text{Variable Cost})$

$Q_{\text{Breakeven}} = \$325,000 / (\$160 - \$120) = 8,125 \text{ units}$.

(Module 35.1, LOS 35.d)

Question #15 of 42

Question ID: 1458028

Jayco, Inc. has a division that makes red ink for the accounting industry. The unit has fixed costs of \$10,000 per month, and is expected to sell 40,000 bottles of ink per month. If the variable cost per bottle is \$2.00 what price must the division charge in order to breakeven?

A) \$2.25.



B) \$2.50.



C) \$2.75.



Explanation

$$40,000 = \$10,000 / (P - \$2)$$

$$40,000P - \$80,000 = \$10,000$$

$$P = \$90,000 / 40,000 = \$2.25.$$

(Module 35.1, LOS 35.d)

Question #16 of 42

Question ID: 1458027

Wanton's San Ysidro Co. manufactures custom door knobs for international clients. Average Revenue is \$35 per unit, variable costs are \$15 per unit, and total costs are \$200,000. If sales are 10,000 units, what is the firm's breakeven sales quantity?

A) 1,750 units.



B) 2,500 units.



C) 3,000 units.



Explanation

For this problem you need 2 equations.

$$\text{Break-even quantity} = \text{Fixed Costs} / (\text{Price} - \text{Variable cost})$$

$$Q = FC / (P - V)$$

$$\text{Fixed Costs} = \text{Total Costs} - \text{Variable Costs}$$

$$FC = TC - VC = 200,000 - 150,000 = 50,000$$

$$Q = 50,000 / (35 - 15) = 2,500$$

(Module 35.1, LOS 35.d)

Question #17 of 42

Question ID: 1462864

Business risk is *best* described as resulting from the combined effects of a firm's:

A) financial risk and sales risk.



B) sales risk and operating risk.



C) operating risk and financial risk.



Explanation

Business risk is the combination of sales risk, which is the variability of a firm's sales, and operating risk, which is the additional variability in operating earnings (EBIT) caused by fixed operating costs. (Module 35.1, LOS 35.a)

Question #18 of 42

Question ID: 1458003

The two major types of risk affecting a firm are *best* described as:

A) business risk and collection risk.



B) business risk and financial risk.



C) financial risk and cash flow risk.



Explanation

The two major types of risk affecting a firm are business risk and financial risk. Business risk is the uncertainty regarding the operating income of a company. Financial risk refers to the uncertainty caused by the fixed cost associated with borrowed money.

(Module 35.1, LOS 35.a)

Question #19 of 42

Question ID: 1458006

Myron Jackson is a private equity fund manager specializing in distressed companies. His investment philosophy is based on the principle that capital structure problems can be fixed, but industry characteristics dictate business models. Jackson would *most likely* be interested in distressed firms with which of the following characteristics?

A) High financial risk and low operating risk.



B) High operating risk and low financial risk.



C) High operating risk and high financial risk.



Explanation

Financial risk refers to the capital structure, while operating risk refers to the operating cost structure. A firm's capital structure is well within the control of management as to how much debt to assume. In contrast, a firm's operating cost structure is usually driven by industry characteristics. This distressed firm's specialist would be looking for firms with capital structure problems that can be solved with an increase in equity capital and a reduction in debt financing. Changing the operating characteristics of the industry is far more challenging.

(Module 35.1, LOS 35.a)

Question #20 of 42

Question ID: 1458022

Additional debt should be used in the firm's capital structure if it increases:

- A) firm earnings.
- B) earnings per share.
- C) the value of the firm.

**Explanation**

The key to finding the optimal capital structure is identifying the level of debt that will maximize firm value. Earnings and earnings per share are not critical in and of themselves when assessing firm value, because they do not consider risk.

(Module 35.1, LOS 35.c)

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Question ID: 1458037

Steven's Bakery produces snack cakes and bread. Listed below are the operating costs for the snack cakes division and the bread division.

	Snack cakes	Bread
Price per package	\$2.00	\$2.50
Variable cost per package	\$1.00	\$1.30
Fixed operating costs	\$25,000	\$30,000
Fixed financing costs	\$10,000	\$10,000

Compared to the snack cakes division, the operating breakeven quantity for the bread division is:

- A) less.
- B) greater.
- C) the same.

**Explanation**

The operating breakeven quantity for the snack cakes division is $\$25,000 / (\$2.00 - \$1.00) = 25,000$.

The operating breakeven quantity for the bread division is $\$30,000 / (\$2.50 - \$1.30) = 25,000$.

(Module 35.1, LOS 35.e)

Question #22 of 42

Question ID: 1458001

Hughes Continental is assessing its business risk. Which of the following factors would *least likely* be considered in the analysis?

A) Debt-equity ratio.



B) Input price variability.



C) Unit sales levels.



Explanation

The main factors affecting business risk are demand variability, sales price variability, input price variability, ability to adjust output prices, and operating leverage. Debt levels affect financial risk, not business (operating) risk.

(Module 35.1, LOS 35.a)

Question #23 of 42

Question ID: 1458004

The additional risk a firm's common shareholders must bear when a firm uses fixed cost financing is *best* described as:

A) financial risk.



B) business risk.



C) operating risk.



Explanation

When a company finances its operations with fixed cost financing (debt), it takes on fixed expenses in the form of interest payments. The greater the proportion of debt in a firm's capital structure, the greater the firm's financial risk.

Business risk refers to the risk associated with a firm's operating income. Operating risk refers to the additional uncertainty about operating earnings caused by fixed operating costs.

(Module 35.1, LOS 35.a)

Question #24 of 42

Question ID: 1457999

Variability in a firm's operating income is *most closely* related to its:

A) financial risk.



B) internal risk.



C) business risk.



Explanation




Business risk is the uncertainty regarding the operating income of a company. Financial risk refers to the uncertainty caused by the fixed cost associated with borrowed money.

(Module 35.1, LOS 35.a)

Question #25 of 42

Question ID: 1458012

Which of the following statements about leverage is *most accurate*?

- A) If the company has no debt outstanding, then its degree of total leverage equals its degree of operating leverage. 
- B) An increase in fixed costs (holding sales and variable costs constant) will reduce the company's degree of operating leverage. 
- C) A decrease in interest expense will increase the company's degree of total leverage. 

Explanation

If debt = 0 then $DFL = 1$ because $DFL = EBIT / (EBIT - I)$

If debt = 0 then $I = 0$ and $DFL = EBIT / (EBIT - 0) = EBIT / EBIT = 1$

$DTL = (DOL)(DFL)$

If $DFL = 1$ then $DTL = (DOL)(1)$ which complies to $DTL = DOL$

A decrease in interest expense will decrease DFL, which will decrease DTL. An increase in fixed costs will increase the company's DOL.

(Module 35.1, LOS 35.b)

Question #26 of 42

Question ID: 1458000

Which of the following factors is *least likely* to affect business risk?

- A) Operating leverage. 
- B) Demand variability. 
- C) Interest rate variability. 

Explanation




Business risk can be defined as the uncertainty inherent in a firm's return on assets (ROA). While changes in interest rates may impact the demand or input prices, there is a more direct impact on business risk with the other two choices.

(Module 35.1, LOS 35.a)

Question #27 of 42

Question ID: 1458024

Which of the following is a key determinant of operating leverage?

- A) Level and cost of debt. 
- B) The tradeoff between fixed and variable costs. 
- C) The competitive nature of the business. 

Explanation




Operating leverage can be defined as the trade off between variable and fixed costs.

(Module 35.1, LOS 35.c)

Question #28 of 42

Question ID: 1458016

All else equal, which of the following statements about operating leverage is *least* accurate?

- A) Firms with high operating leverage experience greater variance in operating income. 
- B) Lower operating leverage generally results in a higher expected rate of return. 
- C) Operating leverage reflects the tradeoff between variable costs and fixed costs. 

Explanation

Operating leverage is the trade off between fixed and variable costs. Higher operating leverage typically is indicative of a firm with higher levels of risk (greater income variance). Given the positive risk/return relationship, higher operating leverage firms are expected to have a higher rate of return. And, lower operating leverage firms are expected to have a lower rate of return.

(Module 35.1, LOS 35.b)

Question #29 of 42

Question ID: 1458002

Which of the following sources of financing is *least likely* to increase a firm's financial risk?

- A) Common equity. 
- B) Operating leases. 
- C) Fixed-rate debt. 

Explanation

Financial risk, in the context of a firm's financing of its operations, results from taking on fixed financial obligations such as debt or operating leases. Common equity financing does not involve fixed obligations.

(Module 35.1, LOS 35.a)

Question #30 of 42

Question ID: 1458023

Financial leverage magnifies:

- A) taxes.
- B) earnings per share variability.
- C) operating income variability.

**Explanation**

Financial leverage results in the existence of required interest payments and, hence, increased earnings per share variability. Higher debt ratios, given a fixed asset base, result in a greater earnings per share variability. Operating income is based on the products and assets of the firm and not on the firm's financing and, hence, has no impact on financial leverage. Greater financial leverage is likely to reduce taxes due to the tax deductibility of interest payments.

(Module 35.1, LOS 35.c)

Question #31 of 42

Question ID: 1462867

Daley Company sells its output for \$15 per unit. Daley's variable costs, including taxes, are \$10 per unit and its breakeven quantity of sales is 30,000 units. Daley's annual fixed costs are \$50,000 for interest and \$100,000 for rent. If Daley sells 35,000 units in a year, its net income will be:

- A) \$25,000.
- B) \$15,000.
- C) \$35,000.

**Explanation**

The contribution of each unit sold to covering fixed costs is $\$15 - \$10 = \$5$. Because selling 30,000 units just covers fixed costs, each additional unit sold produces a profit of \$5. Profit is $(35,000 - 30,000) \times \$5 = \$25,000$. (Module 35.1, LOS 35.d)

Question #32 of 42

Question ID: 1458029

Annah Korotkin is the sole proprietor of CoverMeUp, a business that designs and sews outdoor clothing for dogs. Each year, she rents a booth at the regional Pet Expo and sells only blankets. Korotkin views the Expo as primarily a marketing tool and is happy to breakeven (that is, cover her booth rental). For the last 3 years, she has sold exactly enough blankets to cover the \$750 booth rental fee. This year, she decided to make all blankets for the Expo out of high-tech waterproof/breathable material that is more expensive to produce, but that she believes she can sell for a higher profit margin. Information on the two types of blankets is as follows:

Per Unit	Last Year's (Basic) Blanket	This Year's (New) Blanket
Sales Price	\$25	\$40
Variable Cost	\$20	\$33

Assuming that Korotkin remains most interested in covering the booth cost (which has increased to \$840), how many more or fewer blankets (new style) does she need to sell to cover the booth cost? To cover this year's booth costs, Korotkin needs to sell:

- A) 30 fewer blankets than last year.
- B) 42 fewer blankets than last year.
- C) 42 more blankets than last year.



Explanation

To obtain this result, we need to calculate Last Year's Breakeven Quantity, This Year's Breakeven Quantity, and calculate the difference.

Step 1: Determine Last Year's (Basic Blanket) breakeven quantity:

$$Q_{BE} = (\text{Fixed Costs}) / (\text{Sales Price per unit} - \text{Variable Cost per unit}) = 750 / (25 - 20) = 150$$

Step 2: Determine This Year's (New Blanket) breakeven quantity:

$$Q_{BE} = (\text{Fixed Costs}) / (\text{Sales Price per unit} - \text{Variable Cost per unit}) = 840 / (40 - 33) = 120$$

Step 3: Determine Change in Units:

$$\Delta Q = Q_{\text{This Year}} - Q_{\text{Last Year}} = 120 - 150 = -30. \text{ Korotkin needs to sell 30 fewer blankets.}$$

(Module 35.1, LOS 35.d)

Question #33 of 42

Question ID: 1457998

Which of the following statements about business risk and financial risk is *least accurate*?

- A) Business risk is the riskiness of the company's assets if it uses no debt.
- B) The greater a company's business risk, the higher its optimal debt ratio.



- C) Factors that affect business risk are demand, sales price, and input price variability.



Explanation

The greater a company's business risk, the *lower* its optimal debt ratio.

(Module 35.1, LOS 35.a)

Question #34 of 42

Question ID: 1458035

Yangtze Delta High Technology produces multimedia-enabled wireless phones. The factory incurs rent, depreciation, salary, and other fixed costs totaling RMB 10 million per year. Also, the company incurs annual interest of RMB 3 million on debt. Each phone sold by Yangtze Delta sells for RMB 200. The variable cost per phone is RMB 150. Yangtze Delta's operating breakeven quantity of sales is *closest to*:

- A) 65,000.
B) 260,000.
C) 200,000.



Explanation

The operating breakeven point is the quantity of product sold at which operating income is zero (revenue equals operating cost).

F = Fixed operating cost = RMB 10,000,000

P = Price per unit = RMB 200

V = Variable cost per unit = RMB 150

Operating breakeven quantity = $F / (P - V) = 10,000,000 / (200 - 150) = 200,000$.

(Module 35.1, LOS 35.e)

Question #35 of 42

Question ID: 1462870

Gordon Castparts has fixed operating costs of \$1.2 million and fixed financing costs of \$400,000. If the price per unit is \$39 and variable costs are \$22 per unit, Gordon's operating breakeven quantity of sales is *closest to*:

- A) 54,500.
B) 70,600.
C) 94,100.



Explanation

Operating breakeven quantity of sales = $1.2 \text{ million} / (39 - 22) = 70,588 \text{ units}$. (Module 35.1, LOS 35.e)

Question #36 of 42

Question ID: 1462863

Operating risk is *most likely* to increase as a result of:

- A) an increase in fixed production costs.
- B) an increase in sales risk.
- C) increased variability of costs.



Explanation

Operating risk refers to uncertainty about operating earnings arising from fixed production (operating) costs. (Module 35.1, LOS 35.a)

Question #37 of 42

Question ID: 1458005

Business risk is *most* accurately described as:

- A) another term for sales risk.
- B) another term for operating risk.
- C) consisting of both sales risk and operating risk.



Explanation

Business risk is the combination of sales risk and operating risk. Business risk refers to the risk associated with a firm's operating income and is the result of uncertainty about a firm's revenues and the expenditures necessary to produce those revenues.

Sales risk is the uncertainty about the firm's sales. Operating risk refers to the additional uncertainty about operating earnings caused by fixed operating costs. The greater the proportion of fixed costs to variable costs, the greater a firm's operating risk.

(Module 35.1, LOS 35.a)

Question #38 of 42

Question ID: 1458017

An analyst has gathered the following expenditure information for three different firms, each of which has a sales level of \$4 million.

Costs for firms under consideration (in millions)			
	Firm A	Firm B	Firm C
Variable Costs	\$2.00	\$2.60	\$2.40
Fixed Costs	\$1.00	\$1.30	\$1.40
Interest Expense	\$0.20	\$0.00	\$0.20

Which firm has the *highest* degree of operating leverage (DOL)?

- A) Firm B.
- B) Firm A.
- C) Firm C.



Explanation

The DOL for the three companies is as follows:

$$\text{DOL} = (\text{Total Revenue} - \text{Total Variable Costs}) / (\text{TR} - \text{TVC} - \text{Total Fixed Costs})$$

$$\text{Firm A: } (\$4.00 - \$2.00) / (\$4.00 - \$2.00 - \$1.00) = 2$$

$$\text{Firm B: } (\$4.00 - \$2.60) / (\$4.00 - \$2.60 - \$1.30) = 14$$

$$\text{Firm C: } (\$4.00 - \$2.40) / (\$4.00 - \$2.40 - \$1.40) = 8$$

(Note: Interest expense does not affect operating leverage.)

(Module 35.1, LOS 35.b)

Question #39 of 42

Question ID: 1458015

Which of the following statements regarding leverage is *most accurate*?

- A) A firm with low operating leverage has a small proportion of its total costs in fixed costs.
- B) A firm with high business risk is more likely to increase its use of financial leverage than a firm with low business risk.
- C) High levels of financial leverage increase business risk while high levels of operating leverage will decrease business risk.



Explanation

A firm with high operating leverage has a high percentage of its total costs in fixed costs.

(Module 35.1, LOS 35.b)

Question #40 of 42

Question ID: 1462868

First Choice, Inc., sold 40,000 units during its most recent quarter; had fixed operating costs of \$70,000, total variable costs of \$140,000, and interest expense of \$80,000; and charged a price of \$7.75 per unit. First Choice's breakeven level of sales, based on these values, is *closest* to:

- A) 16,500.
- B) 28,000.
- C) 35,000.

**Explanation**

Variable cost per unit is $140,000 / 40,000 = \$3.50$.

$$\text{Breakeven level of sales} = \frac{70,000 + 80,000}{7.75 - 3.50} = 35,294 \text{ (Module 35.1, LOS 35.d)}$$

Question #41 of 42

Question ID: 1458009

During a period of expansion in the economy, compared to firms with lower operating leverage, earnings growth for firms with high operating leverage will be:

- A) lower.
- B) higher.
- C) unaffected.

**Explanation**

If a high percentage of a firm's total costs are fixed, the firm is said to have high operating leverage. High operating leverage, other things held constant, means that a relatively small change in sales will result in a large change in operating income. Therefore, during an expansionary phase in the economy a highly leveraged firm will have higher earnings growth than a lesser leveraged firm. The opposite will happen during an economic contraction.

(Module 35.1, LOS 35.b)

Question #42 of 42

Question ID: 1458011

If a 10% increase in sales causes earnings per share to increase from \$1.00 to \$1.50, and if the firm has no debt, then what is its degree of operating leverage?

- A) 4.2.
- B) 5.0.



C) 4.7.



Explanation

The percentage change in earnings that results from a 1% change in sales is a firm's degree of *total* leverage. Here, the percent change in EPS is $(\$1.50 / \$1.00) - 1 = 50\%$, and $DTL = \% \Delta EPS / \% \Delta Sales = 50\% / 10\% = 5.0$. Because this firm has no debt, its degree of financial leverage is 1.0 and its degree of total leverage equals its degree of operating leverage, which must also be 5.0.

(Module 35.1, LOS 35.b)