CHAPTER 3
ANALYSIS OF FINANCIAL STATEMENTS

(Difficulty: E = Easy, M = Medium, and T = Tough)

Multiple Choice: Conceptual

Easy:

Current ratio **Answer: a Diff: E**

1. All else being equal, which of the following will increase a company's current ratio?

   a. An increase in accounts receivable.
   b. An increase in accounts payable.
   c. An increase in net fixed assets.
   d. Statements a and b are correct.
   e. All of the statements above are correct.

Current ratio **Answer: d Diff: E**

2. Pepsi Corporation's current ratio is 0.5, while Coke Company's current ratio is 1.5. Both firms want to "window dress" their coming end-of-year financial statements. As part of its window dressing strategy, each firm will double its current liabilities by adding short-term debt and placing the funds obtained in the cash account. Which of the statements below best describes the actual results of these transactions?

   a. The transactions will have no effect on the current ratios.
   b. The current ratios of both firms will be increased.
   c. The current ratios of both firms will be decreased.
   d. Only Pepsi Corporation's current ratio will be increased.
   e. Only Coke Company's current ratio will be increased.

Cash flows **Answer: a Diff: E**

3. Which of the following alternatives could potentially result in a net increase in a company's cash flow for the current year?

   a. Reduce the days sales outstanding ratio.
   b. Increase the number of years over which fixed assets are depreciated.
   c. Decrease the accounts payable balance.
   d. Statements a and b are correct.
   e. All of the statements above are correct.

Leverage and financial ratios **Answer: d Diff: E**

4. Stennett Corp.'s CFO has proposed that the company issue new debt and use the proceeds to buy back common stock. Which of the following are likely to occur if this proposal is adopted? (Assume that the proposal would have no effect on the company's operating income.)

   a. Return on assets (ROA) will decline.
   b. The times interest earned ratio (TIE) will increase.
   c. Taxes paid will decline.
   d. Statements a and c are correct.
   e. None of the statements above is correct.

Leverage and profitability ratios **Answer: e Diff: E**

5. Amazon Electric wants to increase its debt ratio, which will also increase its interest expense. Assume that the higher debt ratio will have no effect on the company's operating income, total assets, or tax rate. Also, assume that the basic earning power ratio exceeds the before-tax cost of debt financing. Which of the following will occur if the company increases its debt ratio?

   a. Its ROA will fall.
   b. Its ROE will increase.
   c. Its basic earning power (BEP) will stay unchanged.
   d. Statements a and c are correct.
   e. All of the statements above are correct.

EVA **Answer: b Diff: E N**

6. Which of the following statements is most correct?

   a. A company that has positive net income must also have positive EVA.
   b. If a company's ROE is greater than its cost of equity, its EVA is positive.
   c. If a company increases its EVA, its ROE must also increase.
   d. Statements a and b are correct.
   e. All of the above statements are correct.

ROE and EVA **Answer: e Diff: E**

7. Which of the following statements is most correct about Economic Value Added (EVA)?

   a. If a company has no debt, its EVA equals its net income.
   b. If a company has positive ROE, its EVA must also be positive.
   c. A company's EVA will be positive whenever the cost of equity exceeds the ROE.
   d. All of the statements above are correct.
   e. None of the statements above is correct.

ROE and EVA **Answer: b Diff: E**

8. Devon Inc. has a higher ROE than Berwyn Inc. (17 percent compared to 14 percent), but it has a lower EVA than Berwyn. Which of the following factors could explain the relative performance of these two companies?

   a. Devon is much larger than Berwyn.
   b. Devon is riskier, has a higher WACC, and a higher cost of equity.
   c. Devon has a higher operating income (EBIT).
   d. Statements a and b are correct.
   e. All of the statements above are correct.

Ratio analysis **Answer: b Diff: E**

9. Bedford Hotels and Breezewood Hotels both have $100 million in total assets and a 10 percent return on assets (ROA). Each company has a 40 percent tax rate. Bedford, however, has a higher debt ratio and higher interest expense. Which of the following statements is most correct?

   a. The two companies have the same basic earning power (BEP).
   b. Bedford has a higher return on equity (ROE).
   c. Bedford has a lower level of operating income (EBIT).
   d. Statements a and b are correct.
   e. All of the statements above are correct.

Financial statement analysis **Answer: a Diff: E**

10. Company J and Company K each recently reported the same earnings per share (EPS). Company J's stock, however, trades at a higher price. Which of the following statements is most correct?

   a. Company J must have a higher P/E ratio.
   b. Company J must have a higher market to book ratio.
   c. Company J must be riskier.
   d. Company J must have fewer growth opportunities.
   e. All of the statements above are correct.

Financial statement analysis **Answer: e Diff: E**

11. Company A's ROE is 20 percent, while Company B's ROE is 15 percent. Which of the following statements is most correct?

   a. Company A must have a higher ROA than Company B.
   b. Company A must have a higher EVA than Company B.
   c. Company A must have a higher net income than Company B.
   d. All of the statements above are correct.
   e. None of the statements above is correct.

Financial statement analysis **Answer: e Diff: E**

12. Company A and Company B have the same total assets, return on assets (ROA), and profit margin. However, Company A has a higher debt ratio and interest expense than Company B. Which of the following statements is most correct?

    a. Company A has a higher ROE (return on equity) than Company B.
    b. Company A has a higher total assets turnover than Company B.
    c. Company A has a higher operating income (EBIT) than Company B.
    d. Statements a and b are correct.
    e. Statements a and c are correct.

Financial statement analysis **Answer: d Diff: E N**

13. Nelson Company is thinking about issuing new common stock. The proceeds from the stock issue will be used to reduce the company's outstanding debt and interest expense. The stock issue will have no effect on the company's total assets, EBIT, or tax rate. Which of the following is likely to occur if the company goes ahead with the stock issue?

    a. The company's net income will increase.
    b. The company's times interest earned ratio will increase.
    c. The company's ROA will increase.
    d. All of the above statements are correct.
    e. None of the above statements is correct.

Miscellaneous ratios **Answer: a Diff: E**

14. Companies A and B have the same profit margin and debt ratio. However, Company A has a higher return on assets and a higher return on equity than Company B. Which of the following can explain these observed ratios?

    a. Company A must have a higher total assets turnover than Company B.
    b. Company A must have a higher equity multiplier than Company B.
    c. Company A must have a higher current ratio than Company B.
    d. Statements b and c are correct.
    e. All of the statements above are correct.

Miscellaneous ratios **Answer: e Diff: E R**

15. Bichette Furniture Company recently issued new common stock and used the proceeds to reduce its short-term notes payable and accounts payable. This action had no effect on the company's total assets or operating income. Which of the following effects did occur as a result of this action?

    a. The company's current ratio decreased.
    b. The company's basic earning power ratio increased.
    c. The company's time interest earned ratio decreased.
    d. The company's debt ratio increased.
    e. The company's equity multiplier decreased.

Medium:

Current ratio **Answer: d Diff: M**

16. Van Buren Company has a current ratio = 1.9. Which of the following actions will increase the company's current ratio?

a. Use cash to reduce short-term notes payable.
b. Use cash to reduce accounts payable.
c. Issue long-term bonds to repay short-term notes payable.
d. All of the statements above are correct.
e. Statements b and c are correct.

Current ratio **Answer: e Diff: M**

17. Which of the following actions can a firm take to increase its current ratio?

a. Issue short-term debt and use the proceeds to buy back long-term debt with a maturity of more than one year.
b. Reduce the company's days sales outstanding to the industry average and use the resulting cash savings to purchase plant and equipment.
c. Use cash to purchase additional inventory.
d. Statements a and b are correct.
e. None of the statements above is correct.

Ratio analysis **Answer: c Diff: M**

18. As a short-term creditor concerned with a company's ability to meet its financial obligation to you, which one of the following combinations of ratios would you most likely prefer?

	Current ratio	TIE	Debt ratio
a.	0.5	0.5	0.33
b.	1.0	1.0	0.50
c.	1.5	1.5	0.50
d.	2.0	1.0	0.67
e.	2.5	0.5	0.71

Ratio analysis **Answer: c Diff: M N**

19. Drysdale Financial Company and Commerce Financial Company have the same total assets, the same total assets turnover, and the same return on equity. However, Drysdale has a higher return on assets than Commerce. Which of the following can explain these ratios?

a. Drysdale has a higher profit margin and a higher debt ratio than Commerce.
b. Drysdale has a lower profit margin and a lower debt ratio than Commerce.
c. Drysdale has a higher profit margin and a lower debt ratio than Commerce.
d. Drysdale has lower net income but more common equity than Commerce.
e. Drysdale has a lower price earnings ratio than Commerce.

Ratio analysis **Answer: a Diff: M**

20. You are an analyst following two companies, Company X and Company Y. You have collected the following information:

- The two companies have the same total assets.
- Company X has a higher total assets turnover than Company Y.
- Company X has a higher profit margin than Company Y.
- Company Y has a higher inventory turnover ratio than Company X.
- Company Y has a higher current ratio than Company X.

Which of the following statements is most correct?

a. Company X must have a higher net income.
b. Company X must have a higher ROE.
c. Company Y must have a higher ROA.
d. Statements a and b are correct.
e. Statements a and c are correct.

Effects of leverage **Answer: a Diff: M**

21. Which of the following statements is most correct?

a. A firm with financial leverage has a larger equity multiplier than an otherwise identical firm with no debt in its capital structure.
b. The use of debt in a company's capital structure results in tax benefits to the investors who purchase the company's bonds.
c. All else equal, a firm with a higher debt ratio will have a lower basic earning power ratio.
d. All of the statements above are correct.
e. Statements a and c are correct.

Financial statement analysis **Answer: a Diff: M**

22. Which of the following statements is most correct?

a. An increase in a firm's debt ratio, with no changes in its sales and operating costs, could be expected to lower its profit margin on sales.
b. An increase in the DSO, other things held constant, would generally lead to an increase in the total assets turnover ratio.
c. An increase in the DSO, other things held constant, would generally lead to an increase in the ROE.
d. In a competitive economy, where all firms earn similar returns on equity, one would expect to find lower profit margins for airlines, which require a lot of fixed assets relative to sales, than for fresh fish markets.
e. It is more important to adjust the debt ratio than the inventory turnover ratio to account for seasonal fluctuations.

Financial statement analysis **Answer: d Diff: M N**

23. Harte Motors and Mills Automotive each have the same total assets, the same level of sales, and the same return on equity (ROE). Harte Motors, however, has less equity and a higher debt ratio than does Mills Automotive. Which of the following statements is most correct?

    a. Mills Automotive has a higher net income than Harte Motors.
    b. Mills Automotive has a higher profit margin than Harte Motors.
    c. Mills Automotive has a higher return on assets (ROA) than Harte Motors.
    d. All of the statements above are correct.
    e. None of the statements above is correct.

Leverage and financial ratios **Answer: e Diff: M**

24. Company A and Company B have the same total assets, tax rate, and net income. Company A, however, has a lower profit margin than Company B. Company A also has a higher debt ratio and, therefore, higher interest expense than Company B. Which of the following statements is most correct?

    a. Company A has a higher total assets turnover.
    b. Company A has a higher return on equity.
    c. Company A has a higher basic earning power ratio.
    d. Statements a and b are correct.
    e. All of the statements above are correct.

Leverage and financial ratios **Answer: d Diff: M N**

25. Company A and Company B have the same tax rate, total assets, and basic earning power. Both companies have positive net incomes. Company A has a higher debt ratio, and therefore, higher interest expense than Company B. Which of the following statements is true?

    a. Company A has a higher ROA than Company B.
    b. Company A has a higher times interest earned (TIE) ratio than Company B.
    c. Company A has a higher net income than Company B.
    d. Company A pays less in taxes than Company B.
    e. Company A has a lower equity multiplier than Company B.

Du Pont equation **Answer: b Diff: M R**

26. You observe that a firm's profit margin is below the industry average, while its return on equity and debt ratio exceed the industry average. What can you conclude?

    a. Return on assets must be above the industry average.
    b. Total assets turnover must be above the industry average.
    c. Total assets turnover must be below the industry average.
    d. Statements a and b are correct.
    e. None of the statements above is correct.

ROE and EVA **Answer: d Diff: M**

27. Huxtable Medical's CFO recently estimated that the company's EVA for the past year was zero. The company's cost of equity capital is 14 percent, its cost of debt is 8 percent, and its debt ratio is 40 percent. Which of the following statements is most correct?

a. The company's net income was zero.
b. The company's net income was negative.
c. The company's ROA was 14 percent.
d. The company's ROE was 14 percent.
e. The company's after-tax operating income was less than the total dollar cost of capital.

ROE and EVA **Answer: b Diff: M**

28. Which of the following statements is most correct?

a. If two firms have the same ROE and the same level of risk, they must also have the same EVA.
b. If a firm has positive EVA, this implies that its ROE exceeds its cost of equity.
c. If a firm has positive ROE, this implies that its EVA is also positive.
d. Statements b and c are correct.
e. All of the statements above are correct.

Miscellaneous ratios **Answer: b Diff: M**

29. Which of the following statements is most correct?

a. If Firms A and B have the same earnings per share and market to book ratio, they must have the same price earnings ratio.
b. Firms A and B have the same net income, taxes paid, and total assets. If Firm A has a higher interest expense, its basic earnings power ratio (BEP) must be greater than that of Firm B.
c. Firms A and B have the same net income. If Firm A has a higher interest expense, its return on equity (ROE) must be greater than that of Firm B.
d. All of the statements above are correct.
e. None of the statements above is correct.

Miscellaneous ratios **Answer: e Diff: M**

30. Reeves Corporation forecasts that its operating income (EBIT) and total assets will remain the same as last year, but that the company's debt ratio will increase this year. What can you conclude about the company's financial ratios? (Assume that there will be no change in the company's tax rate.)

    a. The company's basic earning power (BEP) will fall.
    b. The company's return on assets (ROA) will fall.
    c. The company's equity multiplier (EM) will increase.
    d. All of the statements above are correct.
    e. Statements b and c are correct.

Miscellaneous ratios **Answer: d Diff: M**

31. Company X has a higher ROE than Company Y, but Company Y has a higher ROA than Company X. Company X also has a higher total assets turnover ratio than Company Y; however, the two companies have the same total assets. Which of the following statements is most correct?

    a. Company X has a lower debt ratio than Company Y.
    b. Company X has a lower profit margin than Company Y.
    c. Company X has a lower net income than Company Y.
    d. Statements b and c are correct.
    e. All of the statements above are correct.

Tough:

ROE and EVA **Answer: a Diff: T**

32. Division A has a higher ROE than Division B, yet Division B creates more value for shareholders and has a higher EVA than Division A. Both divisions, however, have positive ROEs and EVAs. What could explain these performance measures?

    a. Division A is riskier than Division B.
    b. Division A is much larger (in terms of equity capital employed) than Division B.
    c. Division A has less debt than Division B.
    d. Statements a and b are correct.
    e. All of the statements above are correct.

Ratio analysis **Answer: d Diff: T**

33. You have collected the following information regarding Companies C and D:

- The two companies have the same total assets.
- The two companies have the same operating income (EBIT).
- The two companies have the same tax rate.
- Company C has a higher debt ratio and interest expense than Company D.
- Company C has a lower profit margin than Company D.

On the basis of this information, which of the following statements is most correct?

a. Company C must have a higher level of sales.
b. Company C must have a lower ROE.
c. Company C must have a higher times interest earned (TIE) ratio.
d. Company C must have a lower ROA.
e. Company C must have a higher basic earning power (BEP) ratio.

Ratio analysis **Answer: d Diff: T**

34. An analyst has obtained the following information regarding two companies, Company X and Company Y:

- Company X and Company Y have the same total assets.
- Company X has a higher interest expense than Company Y.
- Company X has a lower operating income (EBIT) than Company Y.
- Company X and Company Y have the same return on equity (ROE).
- Company X and Company Y have the same total assets turnover (TATO).
- Company X and Company Y have the same tax rate.

On the basis of this information, which of the following statements is most correct?

a. Company X has a higher times interest earned (TIE) ratio.
b. Company X and Company Y have the same debt ratio.
c. Company X has a higher return on assets (ROA).
d. Company X has a lower profit margin.
e. Company X has a higher basic earning power (BEP) ratio.

Ratio analysis and Du Pont equation **Answer: d Diff: T**

35. Lancaster Co. and York Co. both have the same return on assets (ROA). However, Lancaster has a higher total assets turnover and a higher equity multiplier than York. Which of the following statements is most correct?

a. Lancaster has a lower profit margin than York.
b. Lancaster has a lower debt ratio than York.
c. Lancaster has a higher return on equity (ROE) than York.
d. Statements a and c are correct.
e. All of the statements above are correct.

Leverage and financial ratios **Answer: d Diff: T**

36. Blair Company has $5 million in total assets. The company's assets are financed with $1 million of debt and $4 million of common equity. The company's income statement is summarized below:

Operating income (EBIT)	$1,000,000
Interest	100,000
Earnings before taxes (EBT)	$ 900,000
Taxes (40%)	360,000
Net income	$ 540,000

The company wants to increase its assets by $1 million, and it plans to finance this increase by issuing $1 million in new debt. This action will double the company's interest expense but its operating income will remain at 20 percent of its total assets, and its average tax rate will remain at 40 percent. If the company takes this action, which of the following will occur:

a. The company's net income will increase.
b. The company's return on assets will fall.
c. The company's return on equity will remain the same.
d. Statements a and b are correct.
e. All of the statements above are correct.

Miscellaneous ratios **Answer: c Diff: T**

37. Some key financial data and ratios are reported in the table below for Hemmingway Hotels and for its competitor, Fitzgerald Hotels:

Ratio	Hemmingway Hotels	Fitzgerald Hotels
Profit margin	4%	3%
ROA	9%	8%
Total assets	$2.0 billion	$1.5 billion
BEP	20%	20%
ROE	18%	24%

On the basis of the information above, which of the following statements is most correct?

a. Hemmingway has a higher total assets turnover than Fitzgerald.
b. Hemmingway has a higher debt ratio than Fitzgerald.
c. Hemmingway has higher net income than Fitzgerald.
d. Statements a and b are correct.
e. All of the statements above are correct.

Multiple Choice: Problems

Easy:

Financial statement analysis **Answer: a Diff: E**

38. Russell Securities has $100 million in total assets and its corporate tax rate is 40 percent. The company recently reported that its basic earning power (BEP) ratio was 15 percent and its return on assets (ROA) was 9 percent. What was the company's interest expense?

a. $ 0
b. $ 2,000,000
c. $ 6,000,000
d. $15,000,000
e. $18,000,000

Market price per share **Answer: b Diff: E**

39. You are given the following information: Stockholders' equity = $1,250; price/earnings ratio = 5; shares outstanding = 25; and market/book ratio = 1.5. Calculate the market price of a share of the company's stock.

a. $ 33.33
b. $ 75.00
c. $ 10.00
d. $166.67
e. $133.32

Market price per share **Answer: c Diff: E**

40. Given the following information, calculate the market price per share of WAM Inc.:

Net income	$200,000.00
Earnings per share	$2.00
Stockholders' equity	$2,000,000.00
Market/Book ratio	0.20

a. $20.00
b. $ 8.00
c. $ 4.00
d. $ 2.00
e. $ 1.00

Market/book ratio **Answer: c Diff: E**

41. Meyersdale Office Supplies has common equity of $40 million. The company's stock price is $80 per share and its market/book ratio is 4.0. How many shares of stock does the company have outstanding?

a. 500,000
b. 125,000
c. 2,000,000
d. 800,000,000
e. Insufficient information.

Market/book ratio **Answer: e Diff: E N**

42. Strack Houseware Supplies Inc. has $2 billion in total assets. The other side of its balance sheet consists of $0.2 billion in current liabilities, $0.6 billion in long-term debt, and $1.2 billion in common equity. The company has 300 million shares of common stock outstanding, and its stock price is $20 per share. What is Strack's market/book ratio?

a. 1.25
b. 2.65
c. 3.15
d. 4.40
e. 5.00

ROA **Answer: d Diff: E**

43. A firm has a profit margin of 15 percent on sales of $20,000,000. If the firm has debt of $7,500,000, total assets of $22,500,000, and an after-tax interest cost on total debt of 5 percent, what is the firm's ROA?

a. 8.4%
b. 10.9%
c. 12.0%
d. 13.3%
e. 15.1%

TIE ratio **Answer: b Diff: E**

44. Culver Inc. has earnings after interest but before taxes of $300. The company's times interest earned ratio is 7.00. Calculate the company's interest charges.

a. $42.86
b. $50.00
c. $40.00
d. $60.00
e. $57.93

ROE **Answer: c Diff: E**

45. Tapley Dental Supply Company has the following data:

Net income	$240
Sales	$10,000
Total assets	$6,000
Debt ratio	75%
TIE ratio	2.0
Current ratio	1.2
BEP ratio	13.33%

If Tapley could streamline operations, cut operating costs, and raise net income to $300 without affecting sales or the balance sheet (the additional profits will be paid out as dividends), by how much would its ROE increase?

a. 3.00%
b. 3.50%
c. 4.00%
d. 4.25%
e. 5.50%

Profit margin **Answer: c Diff: E**

46. Your company had the following balance sheet and income statement information for 2002:

Balance Sheet:

Cash	$ 20		
A/R	1,000		
Inventories	5,000		
Total current assets	$6,020	Debt	$4,000
Net fixed assets	2,980	Equity	5,000
Total assets	$9,000	Total claims	$9,000

Income Statement:

Sales	$10,000
Cost of goods sold	9,200
EBIT	$ 800
Interest (10%)	400
EBT	$ 400
Taxes (40%)	160
Net income	$ 240

The industry average inventory turnover is 5. You think you can change your inventory control system so as to cause your turnover to equal the industry average, and this change is expected to have no effect on either sales or cost of goods sold. The cash generated from reducing inventories will be used to buy tax-exempt securities that have a 7 percent rate of return. What will your profit margin be after the change in inventories is reflected in the income statement?

a. 2.1%
b. 2.4%
c. 4.5%
d. 5.3%
e. 6.7%

Du Pont equation **Answer: a Diff: E**

47. The Wilson Corporation has the following relationships:

Sales/Total assets	2.0×
Return on assets (ROA)	4.0%
Return on equity (ROE)	6.0%

What is Wilson's profit margin and debt ratio?

a. 2%; 0.33
b. 4%; 0.33
c. 4%; 0.67
d. 2%; 0.67
e. 4%; 0.50

P/E ratio and stock price **Answer: b Diff: E**

48. The Charleston Company is a relatively small, privately owned firm. Last year the company had net income of $15,000 and 10,000 shares were outstanding. The owners were trying to determine the equilibrium market value for the stock prior to taking the company public. A similar firm that is publicly traded had a price/earnings ratio of 5.0. Using only the information given, estimate the market value of one share of Charleston's stock.

a. $10.00
b. $ 7.50
c. $ 5.00
d. $ 2.50
e. $ 1.50

P/E ratio and stock price **Answer: e Diff: E**

49. Cleveland Corporation has 100,000 shares of common stock outstanding, its net income is $750,000, and its P/E is 8. What is the company's stock price?

a. $20.00
b. $30.00
c. $40.00
d. $50.00
e. $60.00

Current ratio and inventory **Answer: b Diff: E N**

50. Iken Berry Farms has $5 million in current assets, $3 million in current liabilities, and its initial inventory level is $1 million. The company plans to increase its inventory, and it will raise additional short-term debt (that will show up as notes payable on the balance sheet) to purchase the inventory. Assume that the value of the remaining current assets will not change. The company's bond covenants require it to maintain a current ratio that is greater than or equal to 1.5. What is the maximum amount that the company can increase its inventory before it is restricted by these covenants?

a. $0.50 million
b. $1.00 million
c. $1.33 million
d. $1.66 million
e. $2.33 million

Medium:

Accounts receivable increase **Answer: b Diff: M R**

51. Cannon Company has enjoyed a rapid increase in sales in recent years, following a decision to sell on credit. However, the firm has noticed a recent increase in its collection period. Last year, total sales were $1 million, and $250,000 of these sales were on credit. During the year, the accounts receivable account averaged $41,096. It is expected that sales will increase in the forthcoming year by 50 percent, and, while credit sales should continue to be the same proportion of total sales, it is expected that the days sales outstanding will also increase by 50 percent. If the resulting increase in accounts receivable must be financed externally, how much external funding will Cannon need? Assume a 365-day year.

a. $ 41,096
b. $ 51,370
c. $ 47,359
d. $106,471
e. $ 92,466

Accounts receivable **Answer: a Diff: M R**

52. Ruth Company currently has $1,000,000 in accounts receivable. Its days sales outstanding (DSO) is 50 days. The company wants to reduce its DSO to the industry average of 32 days by pressuring more of its customers to pay their bills on time. The company's CFO estimates that if this policy is adopted the company's average sales will fall by 10 percent. Assuming that the company adopts this change and succeeds in reducing its DSO to 32 days and does lose 10 percent of its sales, what will be the level of accounts receivable following the change? Assume a 365-day year.

a. $576,000
b. $633,333
c. $750,000
d. $900,000
e. $966,667

ROA **Answer: a Diff: M**

53. A fire has destroyed a large percentage of the financial records of the Carter Company. You have the task of piecing together information in order to release a financial report. You have found the return on equity to be 18 percent. If sales were $4 million, the debt ratio was 0.40, and total liabilities were $2 million, what would be the return on assets (ROA)?

a. 10.80%
b. 0.80%
c. 1.25%
d. 12.60%
e. Insufficient information.

ROA **Answer: e Diff: M**

54. Humphrey Hotels' operating income (EBIT) is $40 million. The company's times interest earned (TIE) ratio is 8.0, its tax rate is 40 percent, and its basic earning power (BEP) ratio is 10 percent. What is the company's return on assets (ROA)?

a. 6.45%
b. 5.97%
c. 4.33%
d. 8.56%
e. 5.25%

ROA **Answer: c Diff: M N**

55. Viera Company has $500,000 in total assets. The company's basic earning power (BEP) is 10 percent, its times interest earned (TIE) ratio is 5, and the company's tax rate is 40 percent. What is the company's return on assets (ROA)?

a. 3.2%
b. 4.0%
c. 4.8%
d. 6.0%
e. 7.2%

ROE **Answer: c Diff: M R**

56. Selzer Inc. sells all its merchandise on credit. It has a profit margin of 4 percent, days sales outstanding equal to 60 days, receivables of $150,000, total assets of $3 million, and a debt ratio of 0.64. What is the firm's return on equity (ROE)? Assume a 365-day year.

a. 7.1%
b. 33.4%
c. 3.4%
d. 71.0%
e. 8.1%

ROE **Answer: b Diff: M**

57. A firm has a debt/equity ratio of 50 percent. Currently, it has interest expense of $500,000 on $5,000,000 of total debt outstanding. Its tax rate is 40 percent. If the firm's ROA is 6 percent, by how many percentage points is the firm's ROE greater than its ROA?

a. 0.0%
b. 3.0%
c. 5.2%
d. 7.4%
e. 9.0%

ROE **Answer: d Diff: M**

58. Assume Meyer Corporation is 100 percent equity financed. Calculate the return on equity, given the following information:

Earnings before taxes	$1,500
Sales	$5,000
Dividend payout ratio	60%
Total assets turnover	2.0
Tax rate	30%

a. 25%
b. 30%
c. 35%
d. 42%
e. 50%

ROE **Answer: c Diff: M**

59. The Amer Company has the following characteristics:

Sales	$1,000
Total assets	$1,000
Total debt/Total assets	35.00%
Basic earning power (BEP) ratio	20.00%
Tax rate	40.00%
Interest rate on total debt	4.57%

What is Amer's ROE?

a. 11.04%
b. 12.31%
c. 16.99%
d. 28.31%
e. 30.77%

Equity multiplier **Answer: d Diff: M**

60. A firm that has an equity multiplier of 4.0 will have a debt ratio of

a. 4.00
b. 3.00
c. 1.00
d. 0.75
e. 0.25

TIE ratio **Answer: e Diff: M**

61. Alumbat Corporation has $800,000 of debt outstanding, and it pays an interest rate of 10 percent annually on its bank loan. Alumbat's annual sales are $3,200,000, its average tax rate is 40 percent, and its net profit margin on sales is 6 percent. If the company does not maintain a TIE ratio of at least 4 times, its bank will refuse to renew its loan, and bankruptcy will result. What is Alumbat's current TIE ratio?

a. 2.4
b. 3.4
c. 3.6
d. 4.0
e. 5.0

TIE ratio **Answer: b Diff: M N**

62. Moss Motors has $8 billion in assets, and its tax rate is 40 percent. The company's basic earning power (BEP) ratio is 12 percent, and its return on assets (ROA) is 3 percent. What is Moss' times interest earned (TIE) ratio?

a. 2.25
b. 1.71
c. 1.00
d. 1.33
e. 2.50

TIE ratio **Answer: b Diff: M**

63. Lancaster Motors has total assets of $20 million. Its basic earning power is 25 percent, its return on assets (ROA) is 10 percent, and the company's tax rate is 40 percent. What is Lancaster's TIE ratio?

a. 2.5
b. 3.0
c. 1.5
d. 1.2
e. 0.6

TIE ratio **Answer: d Diff: M N**

64. Roll's Boutique currently has total assets of $3 million in operation. Over this year, its performance yielded a basic earning power (BEP) of 25 percent and a return on assets (ROA) of 12 percent. The firm's earnings are subject to a 35 percent tax rate. On the basis of this information, what is the firm's times interest earned (TIE) ratio?

a. 1.84
b. 1.92
c. 2.83
d. 3.82
e. 4.17

EBITDA coverage ratio **Answer: a Diff: M N**

65. Peterson Packaging Corp. has $9 billion in total assets. The company's basic earning power (BEP) ratio is 9 percent, and its times interest earned ratio is 3.0. Peterson's depreciation and amortization expense totals $1 billion. It has $0.6 billion in lease payments and $0.3 billion must go towards principal payments on outstanding loans and long-term debt. What is Peterson's EBITDA coverage ratio?

a. 2.06
b. 1.52
c. 2.25
d. 1.10
e. 2.77

Debt ratio **Answer: c Diff: M**

66. Kansas Office Supply had $24,000,000 in sales last year. The company's net income was $400,000, its total assets turnover was 6.0, and the company's ROE was 15 percent. The company is financed entirely with debt and common equity. What is the company's debt ratio?

a. 0.20
b. 0.30
c. 0.33
d. 0.60
e. 0.66

Profit margin **Answer: a Diff: M**

67. The Merriam Company has determined that its return on equity is 15 percent. Management is interested in the various components that went into this calculation. You are given the following information: total debt/total assets = 0.35 and total assets turnover = 2.8. What is the profit margin?

a. 3.48%
b. 5.42%
c. 6.96%
d. 2.45%
e. 12.82%

Financial statement analysis **Answer: e Diff: M R**

68. Collins Company had the following partial balance sheet and complete income statement information for 2002:

Partial Balance Sheet:	
Cash	$ 20
A/R	1,000
Inventories	2,000
Total current assets	$ 3,020
Net fixed assets	2,980
Total assets	$ 6,000
Income Statement:	
Sales	$10,000
Cost of goods sold	9,200
EBIT	$ 800
Interest (10%)	400
EBT	$ 400
Taxes (40%)	160
Net income	$ 240

The industry average DSO is 30 (assuming a 365-day year). Collins plans to change its credit policy so as to cause its DSO to equal the industry average, and this change is expected to have no effect on either sales or cost of goods sold. If the cash generated from reducing receivables is used to retire debt (which was outstanding all last year and has a 10 percent interest rate), what will Collins' debt ratio (Total debt/Total assets) be after the change in DSO is reflected in the balance sheet?

a. 33.33%
b. 45.28%
c. 52.75%
d. 60.00%
e. 65.65%

Financial statement analysis **Answer: b Diff: M R**

69. Taft Technologies has the following relationships:

Annual sales	$1,200,000.00
Current liabilities	$ 375,000.00
Days sales outstanding (DSO) (365-day year)	40.00
Inventory turnover ratio	4.80
Current ratio	1.20

The company's current assets consist of cash, inventories, and accounts receivable. How much cash does Taft have on its balance sheet?

a. -$ 8,333
b. $ 68,493
c. $125,000
d. $200,000
e. $316,667

Basic earning power **Answer: d Diff: M**

70. Aaron Aviation recently reported the following information:

Net income	$500,000
ROA	10%
Interest expense	$200,000

The company's average tax rate is 40 percent. What is the company's basic earning power (BEP)?

a. 14.12%
b. 16.67%
c. 17.33%
d. 20.67%
e. 22.50%

P/E ratio and stock price **Answer: e Diff: M**

71. Dean Brothers Inc. recently reported net income of $1,500,000. The company has 300,000 shares of common stock, and it currently trades at $60 a share. The company continues to expand and anticipates that one year from now its net income will be $2,500,000. Over the next year the company also anticipates issuing an additional 100,000 shares of stock, so that one year from now the company will have 400,000 shares of common stock. Assuming the company's price/earnings ratio remains at its current level, what will be the company's stock price one year from now?

a. $55
b. $60
c. $65
d. $70
e. $75

Current ratio and DSO **Answer: a Diff: M**

72. Parcells Jets has the following balance sheet (in millions):

Cash	$ 100	Notes payable	$ 100
Inventories	300	Accounts payable	200
Accounts receivable	400	Accruals	100
Total current assets	$ 800	Total current liabilities	$ 400
Net fixed assets	1,200	Long-term bonds	600
		Total debt	$1,000
		Total common equity	1,000
Total assets	$2,000	Total liabilities and equity	$2,000

Parcells' DSO (on a 365-day basis) is 40, which is above the industry average of 30. Assume that Parcells is able to reduce its DSO to the industry average without reducing sales, and the company takes the freed-up cash and uses it to reduce its outstanding long-term bonds. If this occurs, what will be the new current ratio?

a. 1.75
b. 1.33
c. 2.33
d. 1.25
e. 1.67

Current ratio **Answer: c Diff: M N**

73. Cartwright Brothers has the following balance sheet (all numbers are expressed in millions of dollars):

Cash	$ 250	Accounts payable	$ 300
Accounts receivable	250	Notes payable	300
Inventories	250	Long-term debt	600
Net fixed assets	1,250	Common stock	800
Total assets	$2,000	Total claims	$2,000

Cartwright's average daily sales are $10 million. Currently, Cartwright's days sales outstanding (DSO) is well above the industry average of 15. Cartwright is implementing a plan that is designed to reduce its DSO to 15 without reducing its sales. If successful the plan will free up cash, half of which will be used to reduce notes payable and the other half will be used to reduce accounts payable. What will be the current ratio if Cartwright fully succeeds in implementing this plan?

a. 1.00
b. 0.63
c. 1.30
d. 1.25
e. 1.50

Current ratio **Answer: b Diff: M N**

74. Jefferson Co. has $2 million in total assets and $3 million in sales. The company has the following balance sheet:

Cash	$ 100,000	Accounts payable	$ 200,000
Accounts receivable	200,000	Accruals	100,000
Inventories	500,000	Notes payable	200,000
Net fixed assets	1,200,000	Long-term debt	700,000
		Common equity	800,000
		Total liabilities	
Total assets	$2,000,000	and equity	$2,000,000

Jefferson wants to improve its inventory turnover ratio so that it equals the industry average of 10.0×. The company would like to accomplish this goal without reducing sales. If successful, the company would take the freed-up cash from the reduction in inventories and use half of it to reduce notes payable and the other half to reduce common equity. What will be Jefferson's current ratio, if it is able to accomplish its goal of improving its inventory management?

a. 1.43
b. 1.50
c. 2.50
d. 2.00
e. 1.20

Credit policy and ROE **Answer: c Diff: M R**

75. Daggy Corporation has the following simplified balance sheet:

Cash	$ 25,000	Current liabilities	$200,000
Inventories	190,000		
Accounts receivable	125,000	Long-term debt	300,000
Net fixed assets	360,000	Common equity	200,000
Total assets	$700,000	Total claims	$700,000

The company has been advised that their credit policy is too generous and that they should reduce their days sales outstanding to 36 days (assume a 365-day year). The increase in cash resulting from the decrease in accounts receivable will be used to reduce the company's long-term debt. The interest rate on long-term debt is 10 percent and the company's tax rate is 30 percent. The tighter credit policy is expected to reduce the company's sales to $730,000 and result in EBIT of $70,000. What is the company's expected ROE after the change in credit policy?

a. 14.88%
b. 16.63%
c. 15.86%
d. 18.38%
e. 16.25%

Du Pont equation **Answer: d Diff: M**

76. Austin & Company has a debt ratio of 0.5, a total assets turnover ratio of 0.25, and a profit margin of 10 percent. The Board of Directors is unhappy with the current return on equity (ROE), and they think it could be doubled. This could be accomplished (1) by increasing the profit margin to 12 percent and (2) by increasing debt utilization. Total assets turnover will not change. What new debt ratio, along with the new 12 percent profit margin, would be required to double the ROE?

a. 55%
b. 60%
c. 65%
d. 70%
e. 75%

Sales and extended Du Pont equation **Answer: a Diff: M**

77. Shepherd Enterprises has an ROE of 15 percent, a debt ratio of 40 percent, and a profit margin of 5 percent. The company's total assets equal $800 million. What are the company's sales? (Assume that the company has no preferred stock.)

a. $1,440,000,000
b. $2,400,000,000
c. $ 120,000,000
d. $ 360,000,000
e. $ 960,000,000

Net income and Du Pont equation **Answer: c Diff: M N**

78. Samuels Equipment has $10 million in sales. Its ROE is 15 percent and its total assets turnover is 3.5×. The company is 100 percent equity financed. What is the company's net income?

a. $1,500,000
b. $2,857,143
c. $ 428,571
d. $2,333,333
e. $ 52,500

Tough:

ROE **Answer: c Diff: T**

79. Roland & Company has a new management team that has developed an operating plan to improve upon last year's ROE. The new plan would place the debt ratio at 55 percent, which will result in interest charges of $7,000 per year. EBIT is projected to be $25,000 on sales of $270,000, it expects to have a total assets turnover ratio of 3.0, and the average tax rate will be 40 percent. What does Roland & Company expect its return on equity to be following the changes?

a. 17.65%
b. 21.82%
c. 26.67%
d. 44.44%
e. 51.25%

ROE **Answer: d Diff: T**

80. Georgia Electric reported the following income statement and balance sheet for the previous year:

Balance Sheet:			
Cash	$ 100,000		
Inventories	1,000,000		
Accounts receivable	500,000		
Current assets	$1,600,000		
		Total debt	$4,000,000
Net fixed assets	4,400,000	Total equity	2,000,000
Total assets	$6,000,000	Total claims	$6,000,000

Income Statement:	
Sales	$3,000,000
Operating costs	1,600,000
Operating income (EBIT)	$1,400,000
Interest	400,000
Taxable income (EBT)	$1,000,000
Taxes (40%)	400,000
Net income	$ 600,000

The company's interest cost is 10 percent, so the company's interest expense each year is 10 percent of its total debt.

While the company's financial performance is quite strong, its CFO (Chief Financial Officer) is always looking for ways to improve. The CFO has noticed that the company's inventory turnover ratio is considerably weaker than the industry average, which is 6.0. As an exercise, the CFO asks what would the company's ROE have been last year if the following had occurred:

- The company maintained the same sales, but was able to reduce inventories enough to achieve the industry average inventory turnover ratio.
- The cash that was generated from the reduction in inventories was used to reduce part of the company's outstanding debt. So, the company's total debt would have been $4 million less the freed-up cash from the improvement in inventory policy. The company's interest expense would have been 10 percent of new total debt.
- Assume equity does not change. (The company pays all net income as dividends.)

Under this scenario, what would have been the company's ROE last year?

a. 27.0%
b. 29.5%
c. 30.3%
d. 31.5%
e. 33.0%

ROE and financing **Answer: a Diff: T**

81. Savelots Stores' current financial statements are shown below:

Balance Sheet:

Inventories	$ 500	Accounts payable	$ 100
Other current assets	400	Short-term notes payable	370
Fixed assets	370	Common equity	800
Total assets	$1,270	Total liab. and equity	$1,270

Income Statement:

Sales	$2,000
Operating costs	1,843
EBIT	$ 157
Interest	37
EBT	$ 120
Taxes (40%)	48
Net income	$ 72

A recently released report indicates that Savelots' current ratio of 1.9 is in line with the industry average. However, its accounts payable, which have no interest cost and are due entirely to purchases of inventories, amount to only 20 percent of inventories versus an industry average of 60 percent. Suppose Savelots took actions to increase its accounts payable to inventories ratio to the 60 percent industry average, but it (1) kept all of its assets at their present levels (that is, the asset side of the balance sheet remains constant) and (2) also held its current ratio constant at 1.9. Assume that Savelots' tax rate is 40 percent, that its cost of short-term debt is 10 percent, and that the change in payments will not affect operations. In addition, common equity will not change. With the changes, what will be Savelots' new ROE?

a. 10.5%
b. 7.8%
c. 9.0%
d. 13.2%
e. 12.0%

ROE and refinancing **Answer: d Diff: T**

82. Aurillo Equipment Company (AEC) projected that its ROE for next year would be just 6 percent. However, the financial staff has determined that the firm can increase its ROE by refinancing some high interest bonds currently outstanding. The firm's total debt will remain at $200,000 and the debt ratio will hold constant at 80 percent, but the interest rate on the refinanced debt will be 10 percent. The rate on the old debt is 14 percent. Refinancing will not affect sales, which are projected to be $300,000. EBIT will be 11 percent of sales and the firm's tax rate is 40 percent. If AEC refinances its high interest bonds, what will be its projected new ROE?

a. 3.0%
b. 8.2%
c. 10.0%
d. 15.6%
e. 18.7%

TIE ratio **Answer: d Diff: T**

83. Lombardi Trucking Company has the following data:

Assets	$10,000
Profit margin	3.0%
Tax rate	40%
Debt ratio	60.0%
Interest rate	10.0%
Total assets turnover	2.0

What is Lombardi's TIE ratio?

a. 0.95
b. 1.75
c. 2.10
d. 2.67
e. 3.45

Current ratio **Answer: e Diff: T**

84. Victoria Enterprises has $1.6 million of accounts receivable on its balance sheet. The company's DSO is 40 (based on a 365-day year), its current assets are $2.5 million, and its current ratio is 1.5. The company plans to reduce its DSO from 40 to the industry average of 30 without causing a decline in sales. The resulting decrease in accounts receivable will free up cash that will be used to reduce current liabilities. If the company succeeds in its plan, what will Victoria's new current ratio be?

a. 1.50
b. 1.97
c. 1.26
d. 0.72
e. 1.66

P/E ratio and stock price **Answer: b Diff: T**

85. XYZ's balance sheet and income statement are given below:

Balance Sheet:

Cash	$ 50	Accounts payable	$ 100
A/R	150	Notes payable	0
Inventories	300	Long-term debt (10%)	700
Fixed assets	500	Common equity (20 shares)	200
Total assets	$1,000	Total liabilities and equity	$1,000

Income Statement:

Sales	$1,000
Cost of goods sold	855
EBIT	$ 145
Interest	70
EBT	$ 75
Taxes (33.333%)	25
Net income	$ 50

The industry average inventory turnover is 5, the interest rate on the firm's long-term debt is 10 percent, 20 shares are outstanding, and the stock sells at a P/E of 8.0. If XYZ changed its inventory methods so as to operate at the industry average inventory turnover, if it used the funds generated by this change to buy back common stock at the current market price and thus to reduce common equity, and if sales, the cost of goods sold, and the P/E ratio remained constant, by what dollar amount would its stock price increase?

a. $ 3.33
b. $ 6.67
c. $ 8.75
d. $10.00
e. $12.50

Du Pont equation and debt ratio **Answer: e Diff: T**

86. Company A has sales of $1,000, assets of $500, a debt ratio of 30 percent, and an ROE of 15 percent. Company B has the same sales, assets, and net income as Company A, but its ROE is 30 percent. What is B's debt ratio? (Hint: Begin by looking at the Du Pont equation.)

a. 25.0%
b. 35.0%
c. 50.0%
d. 52.5%
e. 65.0%

Financial statement analysis **Answer: a Diff: T**

87. A company has just been taken over by new management that believes it can raise earnings before taxes (EBT) from $600 to $1,000, merely by cutting overtime pay and reducing cost of goods sold. Prior to the change, the following data applied:

Total assets	$8,000
Debt ratio	45%
Tax rate	35%
BEP ratio	13.3125%
EBT	$600
Sales	$15,000

These data have been constant for several years, and all income is paid out as dividends. Sales, the tax rate, and the balance sheet will remain constant. What is the company's cost of debt? (Hint: Work only with old data.)

a. 12.92%
b. 13.23%
c. 13.51%
d. 13.75%
e. 14.00%

EBIT **Answer: e Diff: T**

88. Lone Star Plastics has the following data:

Assets	$100,000
Profit margin	6.0%
Tax rate	40%
Debt ratio	40.0%
Interest rate	8.0%
Total assets turnover	3.0

What is Lone Star's EBIT?

a. $ 3,200
b. $12,000
c. $18,000
d. $30,000
e. $33,200

Sales increase needed **Answer: b Diff: T N**

89. Ricardo Entertainment recently reported the following income statement:

Sales	$12,000,000
Cost of goods sold	7,500,000
EBIT	$ 4,500,000
Interest	1,500,000
EBT	$ 3,000,000
Taxes (40%)	1,200,000
Net income	$ 1,800,000

The company's CFO, Fred Mertz, wants to see a 25 percent increase in net income over the next year. In other words, his target for next year's net income is $2,250,000. Mertz has made the following observations:

- Ricardo's operating margin (EBIT/Sales) was 37.5 percent this past year. Mertz expects that next year this margin will increase to 40 percent.
- Ricardo's interest expense is expected to remain constant.
- Ricardo's tax rate is expected to remain at 40 percent.

On the basis of these numbers, what is the percentage increase in sales that Ricardo needs in order to meet Mertz's target for net income?

a. 72.92%
b. 9.38%
c. 2.50%
d. 48.44%
e. 25.00%

Multiple Part:

(The following information applies to the next two problems.)

Fama's French Bakery has a return on assets (ROA) of 10 percent and a return on equity (ROE) of 14 percent. Fama's total assets equal total debt plus common equity (that is, there is no preferred stock). Furthermore, we know that the firm's total assets turnover is 5.

Debt ratio and Du Pont analysis **Answer: c Diff: M N**

90. What is Fama's debt ratio?

a. 14.29%
b. 28.00%
c. 28.57%
d. 55.56%
e. 71.43%

Profit margin and Du Pont analysis **Answer: a Diff: E N**

91. What is Fama's profit margin?

a. 2.00%
b. 4.00%
c. 4.33%
d. 5.33%
e. 6.00%

(The following information applies to the next two problems.)

Miller Technologies recently reported the following balance sheet in its annual report (all numbers are in millions of dollars):

Cash	$ 100	Accounts payable	$ 300
Accounts receivable	300	Notes payable	500
Inventory	500	Total current liabilities	$ 800
Total current assets	$ 900	Long-term debt	1,500
		Total debt	$2,300
		Common stock	500
		Retained earnings	400
Net fixed assets	2,300	Total common equity	$ 900
Total assets	$3,200	Total liabilities and equity	$3,200

Miller also reported sales revenues of $4.5 billion and a 20 percent ROE for this same year.

ROA **Answer: d Diff: M N**

92. What is Miller's ROA?

a. 2.500%
b. 3.125%
c. 4.625%
d. 5.625%
e. 7.826%

Current ratio **Answer: b Diff: M N**

93. Miller Technologies is always looking for ways to expand their business. A plan has been proposed that would entail issuing $300 million in notes payable to purchase new fixed assets (for this problem, ignore depreciation). If this plan were carried out, what would Miller's current ratio be immediately following the transaction?

a. 0.455
b. 0.818
c. 1.091
d. 1.125
e. 1.800

(The following information applies to the next three problems.)

Dokic, Inc. reported the following balance sheets for year-end 2001 and 2002 (dollars in millions):

	2002	2001
Cash	$ 650	$ 500
Accounts receivable	450	700
Inventories	850	600
Total current assets	$1,950	$1,800
Net fixed assets	2,450	2,200
Total assets	$4,400	$4,000
Accounts payable	$ 680	$ 300
Notes payable	200	600
Wages payable	220	200
Total current liabilities	$1,100	$1,100
Long-term bonds	1,000	1,000
Common stock	1,500	1,200
Retained earnings	800	700
Total common equity	$2,300	$1,900
Total liabilities and equity	$4,400	$4,000

Miscellaneous concepts **Answer: e Diff: E N**

94. Which of the following statements is most correct?

a. The company's current ratio was higher in 2002 than it was in 2001.
b. The company's debt ratio was higher in 2002 than it was in 2001.
c. The company issued new common stock during 2002.
d. Statements a and b are correct.
e. Statements a and c are correct.

Net income **Answer: b Diff: E N**

95. The total dividends paid to the company's common stockholders during 2002 was $50 million. What was the company's net income during the year 2002?

a. $ 50 million
b. $150 million
c. $250 million
d. $350 million
e. $450 million

Sales, DSO, and inventory turnover **Answer: b Diff: M N**

96. When reviewing the company's performance for 2002, its CFO observed that the company's inventory turnover ratio was below the industry average inventory turnover ratio of 6.0. In addition, the company's DSO (days sales outstanding, calculated on a 365-day basis) was less than the industry average of 50 (that is, DSO < 50). On the basis of this information, what is the most likely estimate of the company's sales (in millions of dollars) for 2002?

a. $ 2,940
b. $ 5,038
c. $ 7,250
d. $10,863
e. $30,765

(The following information applies to the next two problems.)

Below are the 2001 and 2002 year-end balance sheets for Kewell Boomerangs:

	2002	2001
Cash	$ 100,000	$ 85,000
Accounts receivable	432,000	350,000
Inventories	1,000,000	700,000
Total current assets	$1,532,000	$1,135,000
Net fixed assets	3,000,000	2,800,000
Total assets	$4,532,000	$3,935,000
Accounts payable	$ 700,000	$ 545,000
Notes payable	800,000	900,000
Total current liabilities	$1,500,000	$1,445,000
Long-term debt	1,200,000	1,200,000
Common stock	1,500,000	1,000,000
Retained earnings	332,000	290,000
Total common equity	$1,832,000	$1,290,000
Total liabilities and equity	$4,532,000	$3,935,000

Kewell Boomerangs has never paid a dividend on its common stock. Kewell issued $1,200,000 of long-term debt in 1997. This debt was non-callable and is scheduled to mature in 2027. As of the end of 2002, none of the principal on this debt has been repaid. Assume that 2001 and 2002 sales were the same in both years.

Financial statement analysis **Answer: a Diff: E N**

97. Which of the following statements is most correct?

a. Kewell's current ratio in 2002 was higher than it was in 2001.
b. Kewell's inventory turnover ratio in 2002 was higher than it was in 2001.
c. Kewell's debt ratio in 2002 was higher than it was in 2001.
d. All of the statements above are correct.
e. None of the statements above is correct.

Current ratio **Answer: c Diff: M N**

98. During 2002, Kewell's days sales outstanding (DSO) was 40 days. The industry average DSO was 30 days. Assume instead that in 2002, Kewell had been able to achieve the industry-average DSO without reducing its sales, and that the freed-up cash would have been used to reduce accounts payable. If this reduction in DSO had successfully occurred, what would have been Kewell's new current ratio in 2002? (Assume Kewell uses a 365-day accounting year.)

a. 1.018
b. 1.021
c. 1.023
d. 1.027
e. 1.033

CHAPTER 3
ANSWERS AND SOLUTIONS

1. Current ratio **Answer: a Diff: E**

Remember, the current ratio is CA/CL. In order to increase the current ratio, either current assets must increase, or current liabilities must decrease. Accounts receivable are a current asset, and if they increase the current ratio will increase. So, statement a is true. Accounts payable are a current liability, so if they increase the current ratio declines. So, statement b is false. Net fixed assets are long-term assets, not current assets, so they will not affect the current ratio. So, statement c is false.

2. Current ratio **Answer: d Diff: E**

Pepsi Corporation:
Before: Current ratio = $50/$100 = 0.50.
After: Current ratio = $150/$200 = 0.75.

Coke Company:
Before: Current ratio = $150/$100 = 1.50.
After: Current ratio = $250/$200 = 1.25.

3. Cash flows **Answer: a Diff: E**

Statement a is correct. The other statements are false. Increasing the years over which fixed assets are depreciated results in smaller amounts being depreciated each year. Given that depreciation is a non-cash expense and is used to reduce taxable income, the change would result in less depreciation expense and higher taxes for the year. Since taxes are paid with cash, the company's cash flow would decrease. In addition, decreasing accounts payable results in using cash to pay off the accounts payable balance.

4. Leverage and financial ratios **Answer: d Diff: E**

Statements a and c are correct. The increase in debt payments will reduce net income and hence reduce ROA. Also, higher debt payments will result in lower taxable income and less tax. Therefore, statement d is the best choice.

5. Leverage and profitability ratios **Answer: e Diff: E**

Statement a is true; higher debt will increase interest expense and net income will decline, resulting in a lower ROA than before. Statement b is true; both net income and equity are going to decline, but net income will decline less because the basic earning power exceeds the cost of debt, so ROE will actually rise. Statement c is true; both EBIT and total assets remain the same. Therefore, statement e is the best choice.

6. EVA **Answer: b Diff: E N**

The correct answer is statement b. A company can have positive NI and still have negative EVA. Look at the following formula:
EVA = NI - (Cost of Equity)(Amount of Equity Capital).

If the cost of equity times the amount of equity is greater than NI, EVA could be negative. Just because a company has a positive NI does not mean that it is earning enough to adequately compensate its shareholders. Therefore, statement a is not correct.

For statement b, look at the following formula:
EVA = (ROE - k)(Equity).

As long as ROE is greater than the cost of equity, EVA will be positive. Therefore, statement b is correct.

From the formula above, you can see that a company can increase its EVA by increasing its ROE, decreasing its cost of equity, or by increasing its equity investment. Any of these three changes would increase EVA, not just the increase in ROE. Therefore, statement c is incorrect.

7. ROE and EVA **Answer: e Diff: E**

EVA is the value added after both shareholders and debtholders have been paid. Net income only takes payments to debtholders into account, not shareholders. Therefore, statement a is false. EVA = (ROE - k) × Total equity. So, if k is larger than ROE, EVA would be negative even if ROE is positive. The shareholders are getting a return but not as much as they require. Therefore, statement b is false. Statement c is exactly the opposite of what is true, so it is false. EVA will be negative whenever the cost of equity exceeds the ROE. Since statements a, b, and c are false, the correct choice is statement e.

8. ROE and EVA **Answer: b Diff: E**

$ROE_D > ROE_B$; $EVA_D < EVA_B$.

EVA can be calculated with 3 different equations:

(1) $EVA = EBIT(1 - T) - \left[WACC \times \begin{pmatrix}\text{Total Investor-Supplied} \\ \text{Operating Capital}\end{pmatrix}\right]$.

(2) $EVA = NI - (k_S \times \text{Equity})$.

(3) $EVA = (ROE - k_S) \times \text{Equity}$.

Since Devon has a higher ROE, but its EVA is lower, the only things that could explain this is if (1) its k_s were higher or (2) its equity (or size) were lower.

Since statement a would have the opposite effect (increasing Devon's EVA), statement a is false. If the k_S were higher, then $(ROE - k_S)$ would be lower, and EVA would be lower. Therefore, statement b is true. A higher EBIT would lead to a higher EVA, so statement c is false.

9. Ratio analysis **Answer: b Diff: E**

Bedford = D; Breezewood = Z.
$TA_D = TA_Z$; $ROA_D = ROA_Z$; $T_D = T_Z$; $D/A_D > D/A_Z$; $INT_D > INT_Z$; ROA = NI/TA.
If both companies have the same ROA and total assets, then they must both have the same net incomes. Therefore, $NI_D = NI_Z$.

First, compare BEPs. BEP = EBIT/TA. Work backward up the income statement. If both companies have the same NI and tax rate, then they must both have the same EBT. However, Bedford has higher interest payments, so its EBIT must be higher than Breezewood's. (Remember: EBT + I = EBIT.) Therefore, statement c is false. In addition, Bedford's BEP is higher than Breezewood's, so statements a, d, and e are all false. Statement b must be true for the following reason. Compare ROEs. ROE = ROA × EM and $EM = \frac{1}{1 - D/A}$.

Bedford has a higher D/A ratio than Breezewood; therefore, it has a higher EM than Breezewood. If its EM is higher and its ROA is the same, then Bedford's ROE must be higher than Breezewood's.

10. Financial statement analysis **Answer: a Diff: E**

11. Financial statement analysis **Answer: e Diff: E**

ROE = NI/Equity; ROA = NI/TA; EVA = NI - k_s × Equity.

We know nothing about the debt ratio or equity multiplier of either company. Remember, ROA = ROE/EM (EM = equity multiplier). Since we don't have EM, we don't have enough information to say anything about ROA. Therefore, statement a is false. We don't know anything about the k_s or the amount of equity of either company. Therefore, we don't know enough to determine which company's EVA is higher. Therefore, statement b is false. We know that A's ROE is higher than B's. However, we don't know how much equity either one has, so we cannot say which one has a higher net income. Therefore, statement c is false. Since statements a, b, and c are false, the correct choice must be statement e.

12. Financial statement analysis **Answer: e Diff: E**

From the first sentence, both firms have the same net income, sales, and assets. Since A has more debt, it must have less equity. Thus, its ROE (calculated as Net income/Equity) is higher than B's. So statement a is correct. Since the two firms have the same total assets and sales, their total assets turnover ratios must be the same. So statement b is false. If A has higher interest expense than B but the same net income, this means that A must have higher operating income (EBIT) than B. Therefore statement c is correct. Since statements a and c are correct, the correct choice is statement e.

13. Financial statement analysis **Answer: d Diff: E N**

The correct answer is statement d. Although EBIT is unchanged, interest expense will go down, so NI will increase. Therefore, statement a is correct. If EBIT is unchanged, but interest expense goes down, the TIE ratio (EBIT/INT) will increase. Therefore, statement b is correct. If the stock issue has no effect on the company's total assets, but NI has increased (see statement a), then ROA (NI/TA) will increase. Therefore, statement c is also correct.

14. Miscellaneous ratios **Answer: a Diff: E**

The Du Pont equation states: ROE = PM × TATO × EM.

The firms have the same profit margin and equity multiplier. The equity multiplier is the same because both companies have the same debt ratio. If Company A has a higher ROE than B, then from the Du Pont equation Company A also has a higher total assets turnover ratio than B. The current ratio does not explain the ratios discussed. Therefore, only statement a explains the observed ratios.

15. Miscellaneous ratios **Answer: e Diff: E R**

Current ratio = Current assets/Current liabilities. This transaction will reduce current liabilities, which results in a higher current ratio. So statement a is false. The basic earning power ratio = EBIT/TA. Since neither the firm's operating income (EBIT) or total assets have changed, its BEP ratio remains unchanged. So statement b is false. TIE = EBIT/Interest. EBIT will be unaffected, but we may see interest costs fall due to the firm having less debt. This will result in an increase in the TIE ratio. So statement c is false. Statement d is also false for the same reasons as statements a and b. Total debt is reduced but total assets remain the same. The firm now has more equity, so the equity multiplier (Assets/Equity) will decrease, so statement e is correct.

16. Current ratio **Answer: d Diff: M**

Statement d is the correct answer. For statements a and b a reduction in the numerator and denominator by the same amount will increase the current ratio because the current ratio is greater than 1. In statement c only the denominator goes down (long-term bonds are not in the current ratio), so the current ratio will increase.

17. Current ratio **Answer: e Diff: M**

18. Ratio analysis **Answer: c Diff: M**

19. Ratio analysis **Answer: c Diff: M N**

$TA_D = TA_C$.
$TATO_D = TATO_C$ so, $S/TA_D = S/TA_C$.
$ROE_D = ROE_C$.
$ROA_D > ROA_C$.

Since TATO is the same for both, and since TA is the same for both, sales must be the same for both (since TATO = Sales/TA). Remember the Du Pont equation: ROE = PM × TATO × EM. Drysdale and Commerce have the same TATO. So, if Drysdale has a higher PM and a higher EM (if the debt ratio is higher, the EM is higher), then its ROE must be higher. However, the problem states that the companies have the same ROE. Therefore, statement a is incorrect. If Drysdale's PM and debt ratio are lower than Commerce's and both have the same TATO, Drysdale would have a lower ROE. The problem states that the companies have the same ROE, so statement b is incorrect. Looking again at the Du Pont equation: ROE = PM × TATO × EM. If the ROEs are the same and the TATOs are the same, then (PM × EM) must be the same for the two companies. If Drysdale has a higher PM and a lower EM, then (PM × EM) could be the same for both. Therefore, statement c could explain the ratios in the problem. If Drysdale has lower NI and more common equity (higher TE), then its ROE would be lower. Therefore, statement d is incorrect. The P/E ratio is irrelevant. The stock price cannot explain what is going on with the two companies' ratios.

20. Ratio analysis **Answer: a Diff: T**

Statement a is correct; the others are false. If Company X has a higher total assets turnover (Sales/TA) but the same total assets, it must have higher sales than Y. If X has higher sales and also a higher profit margin (NI/Sales) than Y, it must follow that X has a higher net income than Y. Statement b is false. ROE = NI/EQ or ROE = ROA × Equity multiplier. In either case we need to know the amount of equity that both firms have. This is impossible to determine given the information in the question. Therefore, we cannot say that X must have a higher ROE than Y. Statement c is false. Remember from the Du Pont equation that ROA = Profit margin × Total assets turnover = NI/S × S/TA. Since Company X has both a higher profit margin and total assets turnover than Company Y, X's ROA must also be higher than Y's.

21. Effects of leverage **Answer: a Diff: M**

Statement a is correct. The other statements are false. The use of debt provides tax benefits to the corporations that issue debt, not to the investors who purchase debt (in the form of bonds). The basic earning power ratio would be the same if the only thing that differed between the firms were their debt ratios.

22. Financial statement analysis **Answer: a Diff: M**

Statement a is true because, if a firm takes on more debt, its interest expense will rise, and this will lower its profit margin. Of course, there will be less equity than there would have been, hence the ROE might rise even though the profit margin declined.

23. Financial statement analysis **Answer: d Diff: M N**

The correct answer is statement d. Start with the Du Pont equation: NI/S × S/TA × TA/E = ROE. We know S/TA and ROE are the same for both. Since the equity of Mills is higher than Harte, its NI must also be higher to keep ROE the same. So, statement a is correct. The other statements are then also true. Given Mills' higher net income, both the profit margin and the ROA for Mills are also higher than Harte's.

24. Leverage and financial ratios **Answer: e Diff: M**

TATO = Sales/TA. Both companies have the same total assets. However, since A has a lower profit margin than B and its net income is the same as B's, it must have higher sales; thus, A has a higher total assets turnover ratio than B. Therefore, statement a is true. ROE = NI/Equity. Both companies have the same total assets and net income, but A has more debt and thus less equity than B. Therefore, A has a higher ROE than B. Therefore, statement b is true. BEP = EBIT/TA. We know that A has higher interest payments than B but the same net income as B. Therefore, A must have a higher EBIT than B to cover this extra interest. Thus, A must have a higher basic earning power ratio than B. Therefore, statement c is true. Since statements a, b, and c are true, the correct choice is statement e.

25. Leverage and financial ratios **Answer: d Diff: M N**

If BEP and total assets are equal, we know that EBIT is equal. Company A has a higher debt ratio and higher interest expense than Company B. Since Company A has lower net income, it must have a lower ROA (since total assets are the same). If EBIT is the same for both A and B and Company A has higher interest expense, Company A must have a lower TIE ratio than Company B. Company A has a lower EBT and lower net income than Company B. If A has lower EBT, then Company A pays less in taxes than Company B. There is a positive relationship between the debt ratio and the equity multiplier, which means that Company A has a higher equity multiplier than B because A's debt ratio is higher than B's. Therefore, the correct choice is statement d.

26. Du Pont equation **Answer: b Diff: M R**

The Du Pont equation: ROE = (PM)(TATO)(EM). ROE is above average. PM is below average. EM is above average because a high debt ratio implies a high EM. Therefore, TATO must be higher for the equation to hold. Note that the firm's ROA does not have to be higher than the industry ROA for this equation to hold.

27. ROE and EVA **Answer: d Diff: M**

EVA = NI − (k_s × Equity). k_s × Equity cannot be zero, therefore, net income must be positive if EVA is zero. So statements a and b are false. ROA = NI/TA. This equation really does not have anything to do with the EVA calculation. Statement c is only correct if the firm has zero debt, which we know not to be correct. (We are given information in the question stating that the firm's debt ratio is 40 percent.) Therefore, statement c is also false. ROE = NI/Equity. Rewrite the EVA equation by substituting into it EVA = 0, and you get: NI = k_s × Equity. Divide both sides by Equity and you obtain the following equation: NI/Equity = k_s. Thus ROE = 14%. Statement e would give a negative EVA and the problem states that the firm's EVA is zero, so it is false.

28. ROE and EVA **Answer: b Diff: M**

Statement a is false; EVA depends upon the amount of equity invested, which could be different for the two firms. Statement b is correct; for positive EVA, the ROE must exceed the cost of equity. Statement c is false; it is very plausible to have a firm with positive ROE and a higher cost of equity, resulting in negative EVA.

29. Miscellaneous ratios **Answer: b Diff: M**

Statement b is correct. EBIT = EBT + Interest. Statement c is incorrect because higher interest expense doesn't necessarily imply greater debt. For this statement to be correct, A's amount of debt would have to be greater than B's.

30. Miscellaneous ratios **Answer: e Diff: M**

Statements b and c are correct. ROA = NI/TA. An increase in the debt ratio will result in an increase in interest expense, and a reduction in NI. Thus ROA will fall. EM = Assets/Equity. As debt increases, the amount of equity in the denominator decreases, thus causing the equity multiplier (EM) to increase. Therefore, statement e is the correct choice.

31. Miscellaneous ratios **Answer: d Diff: M**

Since X has a lower ROA (NI/TA) than Y and both firms have the same assets, X must have a lower net income than Y. So statement c is correct. X has a higher ROE (NI/EQ) than Y, even though its net income is lower. Consequently, X must have less equity than Y, and therefore, more debt than Y. So statement a is false. Since X has a higher total assets turnover ratio (Sales/TA) than Y and both firms have the same assets, X's sales must be higher than Y's. This fact, combined with X's lower net income, means that X must have a lower profit margin (NI/Sales) than Y, so statement b is correct. Thus, statements b and c are both correct. So, the correct choice is statement d.

32. ROE and EVA **Answer: a Diff: T**

The following formula will make this question much easier: EVA = (ROE - k_s) × Total equity. If Division A is riskier than Division B, then A's cost of equity capital will be higher than B's. If k_s is higher, EVA will be lower. So, statement a is true. If A is larger than B in terms of equity, then the term (ROE - k_s) will be multiplied by a much larger number for Division A. Since A's ROE is also higher than B's, then its EVA would be higher than B's. Therefore, statement b is false. If A has less debt, then its interest payments will be lower than B's, so its EBIT will be higher. Another way to write the EVA formula is EVA = EBIT (1 – T) – [Cost of capital × Investor-supplied capital employed]. So, a higher EBIT will lead to a higher EVA. In addition, a lower level of debt will make A less risky than B, so A's cost of equity will be lower than B's. From the other EVA formula, we can see that this would cause a higher EVA, not a lower one. So, statement c is false.

33. Ratio analysis **Answer: d Diff: T**

Statement d is correct; the others are false. ROA = NI/TA. Company C has higher interest expense than Company D; therefore, it must have lower net income. Since the two firms have the same total assets, $ROA_C < ROA_D$. Statement a is false; we cannot tell what sales are. From the facts as stated above, they could be the same or different. Statement b is false; Company C must have lower equity than Company D, which could lead it to have a higher ROE because its equity multiplier would be greater than company D's. Statement c is false as TIE = EBIT/Interest, and C has higher interest than D but the same EBIT; therefore, $TIE_C < TIE_D$. Statement e is false; they have the same BEP = EBIT/TA from the facts as given in this problem.

34. Ratio analysis **Answer: d Diff: T**

We can conclude that X has a lower NI, because it has a lower EBIT and higher interest than Y, but the same tax rate as Y. Sales for each company are the same because they have the same total assets and the same total assets turnover ratio (TATO = Sales/TA). Therefore, since X has a lower NI and same sales as Y, it must follow that it has a lower profit margin (NI/Sales).

35. Ratio analysis and Du Pont equation **Answer: d Diff: T**

$ROA_L = ROA_Y$; $S/TA_L > S/TA_Y$; $EM_L > EM_Y$, or $A/E_L > A/E_Y$.

From the Du Pont equation we know that ROA = Profit margin × Total assets turnover. If the 2 firms' ROAs are equal, but Lancaster's total assets turnover is greater than York's then Lancaster's profit margin must be lower than York's. Therefore, statement a is true. The debt ratio is calculated as 1 - 1/Equity multiplier. So, if Lancaster has a higher equity multiplier than York, its debt ratio must be higher too. So, statement b is false. From the extended Du Pont equation we know that ROE = Profit margin × Total assets turnover × Equity multiplier. We also know that ROA = Profit margin × Total assets turnover. Since we know the 2 firms' ROAs are equal and Lancaster has a higher equity multiplier it must have a higher ROE too. Therefore, statement c is true. Since statements a and c are true, the correct choice is statement d.

36. Leverage and financial ratios **Answer: d Diff: T**

The new income statement will be as follows:

Operating income (EBIT)	$1,200,000	0.2 × $6,000,000
Interest expense	200,000	
Earnings before taxes (EBT)	$1,000,000	
Taxes (40%)	400,000	
Net income	$ 600,000	

$$ROA_{Old} = \frac{NI}{Assets} = \frac{\$540,000}{\$5,000,000} = 10.8\%; \quad ROE_{New} = \frac{\$600,000}{\$6,000,000} = 10\%.$$

Therefore, ROA falls.

$$ROE_{Old} = \frac{NI}{Equity} = \frac{\$540,000}{\$4,000,000} = 13.5\%; \quad ROE_{New} = \frac{\$600,000}{\$4,000,000} = 15.0\%.$$

Since net income increases, ROA falls and ROE increases, statement d is the correct choice.

37. Miscellaneous ratios **Answer: c Diff: T**

Step 1: Use the ratios and data to arrive at alternative relationships to answer the question:

TATO = Sales/TA
= NI/TA × S/NI
= ROA × 1/PM.

D/A = TD/TA
= (TA - EQ)/TA
= (TA/TA) - (EQ/TA)
= 1 - (EQ/NI) × (NI/TA)
= 1 - (ROA/ROE).

ROA = NI/TA
NI = TA × ROA.

Step 2: Substitute the data given with the alternative relationships obtained in Step 1:

	Hemmingway	Fitzgerald
TATO = ROA/PM	= 0.09/0.04	= 0.08/0.03
	= 2.25×.	= 2.67×.
D/A = 1 - (ROA/ROE)	= 1 - (0.09/0.18)	= 1 - (0.08/0.24)
	= 0.5.	= 0.667.
NI = TA × ROA	= 2 × 0.09	= 1.5 × 0.08
	= $0.18 billion.	= $0.12 billion.

From the calculations above, statement c is the correct choice.

38. Financial statement analysis **Answer: a Diff: E**

BEP = EBIT/TA
0.15 = EBIT/$100,000,000
EBIT = $15,000,000.

ROA = NI/TA
0.09 = NI/$100,000,000
NI = $9,000,000.

EBT = NI/(1 - T)
EBT = $9,000,000/0.6
EBT = $15,000,000.

Therefore interest expense = $0.

39. Market price per share **Answer: b Diff: E**

Total market value = $1,250(1.5) = $1,875.
Market value per share = $1,875/25 = $75.

Alternative solution:
Book value per share = $1,250/25 = $50.
Market value per share = $50(1.5) = $75.

40. Market price per share **Answer: c Diff: E**

Number of shares = $200,000/$2.00 = 100,000.
Book value per share = $2,000,000/100,000 = $20.
Market value = 0.2(Book value) = 0.2($20) = $4.00 per share.

41. Market/book ratio **Answer: c Diff: E**

$$\frac{M}{B} = \frac{\text{Price per share} \times \text{shares}}{BV}$$

$$4.0 = \frac{\$80 \times \text{shares}}{\$40,000,000}$$

$$\$160,000,000 = \$80 \times \text{shares}$$

$$2,000,000 = \text{shares}.$$

42. Market/book ratio **Answer: e Diff: E N**

TA = $2,000,000,000; CL = $200,000,000; LT debt = $600,000,000; CE = $1,200,000,000; Shares outstanding = 300,000,000; P_0 = $20; M/B = ?

$$\text{Book value} = \frac{\$1,200,000,000}{300,000,000} = \$4.00.$$

$$M/B = \frac{\$20.00}{\$4.00} = 5.0.$$

43. ROA **Answer: d Diff: E**

Net income = 0.15($20,000,000) = $3,000,000.
ROA = $3,000,000/$22,500,000 = 13.3%.

44. TIE ratio **Answer: b Diff: E**

TIE = EBIT/INT
7 = ($300 + INT)/INT
7INT = $300 + INT
6INT = $300
INT = $50.

45. ROE **Answer: c Diff: E**

Equity = 0.25($6,000) = $1,500.

$$\text{Current ROE} = \frac{\text{NI}}{\text{E}} = \frac{\$240}{\$1,500} = 16\%.$$

$$\text{New ROE} = \frac{\$300}{\$1,500} = 0.20 = 20\%.$$

ΔROE = 20% - 16% = 4%.

46. Profit margin **Answer: c Diff: E**

$$\text{Current inventory turnover} = \frac{\text{S}}{\text{Inv}} = \frac{\$10,000}{\$5,000} = 2.$$

$$\text{New inventory turnover} = \frac{\text{S}}{\text{Inv}} = 5; \text{ Inv} = \frac{\text{S}}{5} = \frac{\$10,000}{5} = \$2,000.$$

Freed cash = $5,000 - $2,000 = $3,000.
Increase in NI = 0.07($3,000) = $210.

$$\text{New Profit margin} = \frac{\text{NI}}{\text{Sales}} = \frac{\$240 + \$210}{\$10,000} = 0.0450 = 4.5\%.$$

47. Du Pont equation **Answer: a Diff: E**

First, calculate the profit margin, which equals NI/Sales:
ROA = NI/TA = 0.04.
Sales/Total assets = S/TA = 2.
PM = (NI/TA)(TA/S) = 0.04(0.5) = 0.02. [TA/S = 1/2 = 0.5.]

Next, find the debt ratio by finding the equity ratio:
E/TA = (E/NI)(NI/TA). [ROE = NI/E and ROA = NI/TA.]
E/TA = (1/ROE)(ROA) = (1/0.06)(0.04) = 0.667, or 66.7% equity.
Therefore, D/TA must be 0.333 = 33.3%.

48. P/E ratio and stock price **Answer: b Diff: E**

EPS = $15,000/10,000 = $1.50.
P/E = 5.0 = P/$1.50.
P = $7.50.

49. P/E ratio and stock price **Answer: e Diff: E**

EPS = $750,000/100,000 = $7.50.
P/E = Price/EPS = 8.
Thus, Price = 8 × $7.50 = $60.00.

50. Current ratio and inventory **Answer: b Diff: E N**

With the numbers provided, we can see that Iken Berry Farms has a current ratio of 1.67 (CA/CL = $5/$3 = 1.67). If notes payable are going to be raised to buy inventories, both the numerator and the denominator of the ratio will increase. We can increase current liabilities $1 million before the current ratio reaches 1.5.

$$\frac{CA + X}{CL + X} \geq 1.5$$

$$\frac{\$5{,}000{,}000 + X}{\$3{,}000{,}000 + X} \geq 1.5$$

$$\$5{,}000{,}000 + X \geq \$4{,}500{,}000 + 1.5X$$

$$\$500{,}000 \geq 0.5X$$

$$\$1{,}000{,}000 \geq X$$

$$X \leq \$1{,}000{,}000.$$

51. Accounts receivable increase **Answer: b Diff: M R**

DSO = $41,096/($250,000/365) = 60 days.
New A/R = [($250,000)(1.5)/(365)](60)(1.5) = $92,466.
Hence, increase in receivables = $92,466 - $41,096 = $51,370.

52. Accounts receivable **Answer: a Diff: M R**

First solve for current annual sales using the DSO equation as follows: 50 = $1,000,000/(Sales/365) to find annual sales equal to $7,300,000. If sales fall by 10%, the new sales level will be $7,300,000(0.9) = $6,570,000. Again, using the DSO equation, solve for the new accounts receivable figure as follows: 32 = AR/($6,570,000/365) or AR = $576,000.

53. ROA **Answer: a Diff: M**

Equity multiplier = 1/(1 - D/A) = 1/(1 - 0.4) = 1.67.
ROE = ROA × Equity multiplier
18% = (ROA)(1.67)
ROA = 10.8%.

54. ROA **Answer: e Diff: M**

Step 1: We must find TA. We are given BEP and EBIT.

$$BEP = \frac{EBIT}{TA} \text{ and } TA = \frac{EBIT}{BEP}.$$

Therefore, TA = $40,000,000/0.1, or $400 million.

Step 2: NI/TA = ROA, so now we need to find net income. Net income is found by working through the income statement (in millions):

EBIT	$40
Interest	5 (from TIE ratio: 8 = EBIT/Int)
EBT	$35
Taxes (40%)	14
NI	$21

Step 3: ROA = $21/$400 = 0.0525 = 5.25%.

55. ROA **Answer: c Diff: M N**

BEP = EBIT/TA = 0.10, so EBIT = 0.10 × $500,000 = $50,000.
TIE = EBIT/INT = 5, so INT = $50,000/5 = $10,000.

EBIT	$50,000
Int	-10,000
EBT	$40,000
Taxes (40%)	-16,000
NI	$24,000

ROA = NI/TA = $24,000/$500,000 = 0.048, or 4.8%.

56. ROE **Answer: c Diff: M R**

(Sales per day)(DSO) = A/R
(Sales/365)(60) = $150,000
Sales = $912,500.

Profit margin = Net income/Sales.
Net income = 0.04($912,500) = $36,500.
Debt ratio = 0.64 = Total debt/$3,000,000.
Total debt = $1,920,000.
Total equity = $3,000,000 - $1,920,000 = $1,080,000.
ROE = $36,500/$1,080,000 = 3.38% ≈ 3.4%.

57. ROE **Answer: b Diff: M**

Total equity = ($5,000,000)(2) = $10,000,000.
Total assets = $5,000,000 + $10,000,000 = $15,000,000.
Net income = (0.06)($15,000,000) = $900,000.
ROE = $900,000/$10,000,000 = 9%.
ROE - ROA = 9% - 6% = 3%.

58. ROE **Answer: d Diff: M**

Profit margin = ($1,500(1 - 0.3))/$5,000 = 21%.
Equity multiplier = 1.0 since firm is 100% equity financed.

ROE = (Profit margin)(Assets turnover)(Equity multiplier)
= (21%)(2.0)(1.0) = 42%.

59. ROE **Answer: c Diff: M**

Calculate debt, equity, and EBIT:
Debt = D/A × TA = 0.35($1,000) = $350.
Equity = TA - Debt = $1,000 - $350 = $650.
EBIT = TA × BEP = $1,000(0.20) = $200.

Calculate net income and ROE:
Net income = (EBIT - I)(1 - T) = [$200 - 0.0457($350)](0.6) = $110.4.
ROE = $110.4/$650 = 16.99%.

60. Equity multiplier **Answer: d Diff: M**

Equity multiplier = 4.0 = Total assets/Total equity = 4/1.

Assets = Debt + Equity
4 = Debt + 1
Debt = 3.

Debt/Assets = 3/4 = 0.75.

61. TIE ratio **Answer: e Diff: M**

TIE = EBIT/I, so find EBIT and I.
Interest = $800,000 × 0.1 = $80,000.
Net income = $3,200,000 × 0.06 = $192,000.
Pre-tax income = $192,000/(1 - T) = $192,000/0.6 = $320,000.
EBIT = $320,000 + $80,000 = $400,000.
TIE = $400,000/$80,000 = 5.0×.

62. TIE ratio **Answer: b Diff: M N**

TA = $8,000,000,000; T = 40%; EBIT/TA = 12%; ROA = 3%; TIE ?

$$\frac{\text{EBIT}}{\$8,000,000,000} = 0.12$$

$$\text{EBIT} = \$960,000,000.$$

$$\frac{\text{NI}}{\$8,000,000,000} = 0.03$$

$$\text{NI} = \$240,000,000.$$

Now use the income statement format to determine interest so you can calculate the firm's TIE ratio.

EBIT	$960,000,000	See above.
INT	560,000,000	
EBT	$400,000,000	EBT = $240,000,000/0.6
Taxes (40%)	160,000,000	
NI	$240,000,000	See above.

INT = EBIT – EBT
= $960,000,000 - $400,000,000

TIE = EBIT/INT
= $960,000,000/$560,000,000
= 1.7143 ≈ 1.71.

63. TIE ratio **Answer: b Diff: M**

Remember, TIE = EBIT/Interest. We need to find EBIT and Interest.
TA = $20,000,000; BEP = 25%; ROA = 10%; T = 40%.

BEP = EBIT/TA
25% = EBIT/$20,000,000
$5,000,000 = EBIT.

ROA = NI/TA
10% = NI/$20,000,000
$2,000,000 = NI.

NI = (EBIT - I)(1 - T)
$2,000,000 = ($5,000,000 - I)(1 - 0.4)
$2,000,000 = ($5,000,000 - I)(0.6)
$3,333,333 = $5,000,000 - I
$1,666,667 = I.

Therefore, TIE = EBIT/I
= $5,000,000/$1,666,667
= 3.0×.

64. TIE ratio **Answer: d Diff: M N**

The times interest earned (TIE) ratio is calculated as the ratio of EBIT and interest expense. We can find EBIT from the BEP ratio and total assets given in the problem.

$$\text{BEP} = \frac{\text{EBIT}}{\text{TA}}$$

$$25\% = \frac{\text{EBIT}}{\$3,000,000}$$

$$\text{EBIT} = \$750,000.$$

Interest expense can be obtained from the income statement by simply working your way up the income statement. To do this, however, we must first calculate net income from the data given for ROA.

$$\text{ROA} = \frac{\text{NI}}{\text{TA}}$$

$$12\% = \frac{\text{NI}}{\$3,000,000}$$

$$\text{NI} = \$360,000.$$

Solving for EBT and then interest, we find:

$$\text{EBT} = \frac{\text{NI}}{(1 - \text{T})}$$

$$\text{EBT} = \frac{\$360,000}{(1 - 0.35)}$$

$$\text{EBT} = \$553,846.$$

$$\text{EBIT} - \text{INT} = \text{EBT}$$

$$\$750,000 - \text{INT} = \$553,846$$

$$\text{INT} = \$196,154.$$

We can now calculate the TIE as follows:

$$\text{TIE} = \frac{\text{EBIT}}{\text{INT}}$$

$$\text{TIE} = \frac{\$750,000}{\$196,154}$$

$$\text{TIE} = 3.82\times.$$

65. EBITDA coverage ratio **Answer: a Diff: M N**

TA = $9,000,000,000; EBIT/TA = 9%; TIE = 3; DA = $1,000,000,000; Lease payments = $600,000,000; Principal payments = $300,000,000; EBITDA coverage = ?

EBIT/$9,000,000,000 = 0.09
EBIT = $810,000,000.

3 = EBIT/INT
3 = $810,000,000/INT
INT = $270,000,000.

EBITDA = EBIT + DA
= $810,000,000 + $1,000,000,000
= $1,810,000,000.

$$\text{EBITDA coverage ratio} = \frac{\text{EBITDA + Lease payments}}{\text{INT + Princ. pmts + Lease pmts}}$$
$$= \frac{\$1{,}810{,}000{,}000 + \$600{,}000{,}000}{\$270{,}000{,}000 + \$300{,}000{,}000 + \$600{,}000{,}000}$$
$$= \frac{\$2{,}410{,}000{,}000}{\$1{,}170{,}000{,}000} = 2.0598 \approx 2.06.$$

66. Debt ratio **Answer: c Diff: M**

Debt ratio = Debt/Total assets.

Sales/Total assets = 6
Total assets = $24,000,000/6 = $4,000,000.

ROE = NI/Equity
Equity = NI/ROE = $400,000/0.15 = $2,666,667.

Debt = Total assets - Equity = $4,000,000 - $2,666,667 = $1,333,333.

Debt ratio = $1,333,333/$4,000,000 = 0.3333.

67. Profit margin **Answer: a Diff: M**

Equity multiplier = 1/(1 - 0.35) = 1.5385.

ROE = (Profit margin)(Assets utilization)(Equity multiplier)
15% = (PM)(2.8)(1.5385)
PM = 3.48%.

68. Financial statement analysis **Answer: e Diff: M R**

Current DSO = $\frac{\$1,000}{\$10,000/365}$ = 36.5 days. Industry average DSO = 30 days.

Reduce receivables by $(36.5 - 30)\left(\frac{\$10,000}{365}\right)$ = \$178.08.

Debt = \$400/0.10 = \$4,000.

$\frac{TD}{TA} = \frac{\$4,000 - \$178.08}{\$6,000 - \$178.08}$ = 65.65%.

69. Financial statement analysis **Answer: b Diff: M R**

First, find the amount of current assets:
Current ratio = Current assets/Current liabilities
Current assets = (Current liabilities)(Current ratio)
= \$375,000(1.2) = \$450,000.

Next, find the accounts receivables:
DSO = AR/(Sales/365)
AR = DSO(Sales)(1/365)
= (40)(\$1,200,000)(1/365) = \$131,506.85.

Next, find the inventories:
Inventory turnover = Sales/Inventory
Inventory = Sales/Inventory turnover
= \$1,200,000/4.8 = \$250,000.

Finally, find the amount of cash:
Cash = Current assets - AR - Inventory
= \$450,000 - \$131,506.85 - \$250,000 = \$68,493.15 ≈ \$68,493.

70. Basic earning power **Answer: d Diff: M**

Given ROA = 10% and net income of $500,000, total assets must be $5,000,000.

$$\text{ROA} = \frac{\text{NI}}{\text{A}}$$

$$10\% = \frac{\$500,000}{\text{TA}}$$

$$\text{TA} = \$5,000,000.$$

To calculate BEP, we still need EBIT. To calculate EBIT construct a partial income statement:

EBIT	$1,033,333	($200,000 + $833,333)
Interest	200,000	(Given)
EBT	$ 833,333	$500,000/0.6
Taxes (40%)	333,333	
NI	$ 500,000	

$$\text{BEP} = \frac{\text{EBIT}}{\text{TA}}$$

$$= \frac{\$1,033,333}{\$5,000,000}$$

$$= 0.2067 = 20.67\%.$$

71. P/E ratio and stock price **Answer: e Diff: M**

The current EPS is $1,500,000/300,000 shares or $5. The current P/E ratio is then $60/$5 = 12. The new number of shares outstanding will be 400,000. Thus, the new EPS = $2,500,000/400,000 = $6.25. If the shares are selling for 12 times EPS, then they must be selling for $6.25(12) = $75.

72. Current ratio and DSO **Answer: a Diff: M**

Step 1: Determine average daily sales using the old DSO.

$$\text{DSO} = \frac{\text{Receivables}}{\text{Average Daily Sales}}.$$

If DSO changes while sales remain the same, then receivables must change.

$$40 = \frac{\$400}{\text{Average Daily Sales}}$$

$\$10 = \text{Average Daily Sales}.$

Step 2: Determine the new level of receivables required for Parcells to achieve the industry average DSO.

$$30 = \frac{\text{Receivables}}{\$10}$$

$\$300 = \text{Receivables}.$

Step 3: Calculate the new current ratio.
Receivables decline by $100, so current assets declined by $100. Therefore, the new level of current assets is $800 - $100 = $700. Since the $100 cash freed up is used to reduce long-term bonds, current liabilities remain at $400. Current ratio = $700/$400 = 1.75.

73. Current ratio **Answer: c Diff: M N**

Currently:
DSO = AR/Average Daily Sales
= $250/$10
= 25 days.

Now, Cartwright wants to reduce DSO to 15. The firm needs to reduce accounts receivable because it doesn't want to reduce average daily sales. So, we can calculate the new AR balance as follows:

DSO = AR/Average Daily Sales
15 = AR/$10
$150 million = AR.

If the firm reduces its DSO to the industry average, its AR will be $150 million, reduced by $100 million. Therefore, there must be an equal reduction on the right side of the balance sheet. Half of this $100 million of freed-up cash will be used to reduce notes payable, and the other half will be used to reduce accounts payable. Therefore, notes payable will fall by $50 million to $250 million, and accounts payable will fall by $50 million to $250 million.

Therefore, we can now calculate the firm's new current ratio:

Current Ratio = CA/CL
= (Cash + AR + Inv.)/(Notes Payable + Accounts Payable)
= ($250 + $150 + $250)/($250 + $250)
= $650/$500
= 1.30×.

74. Current ratio **Answer: b Diff: M N**

Step 1: Calculate the firm's current inventory turnover.
Inv. turnover = Sales/Inv.
= $3,000,000/$500,000
= 6.0×.

New Inv. turnover = 10.0× (but sales stay the same).

Step 2: Calculate what the firm's inventory balance should be if the firm maintains the industry average inventory turnover.
Inv. turnover = Sales/Inv.
10× = $3 million/Inv.
$300,000 = Inv.

The new inventory level will be $300,000, so inventories will be reduced by $200,000 from the old level. This means that current assets will decrease by $200,000.

Step 3: Calculate the firm's new current assets level.
CA = Cash + Inv. + A/R
= $100,000 + $300,000 + $200,000
= $600,000.

Half of the $200,000 that is freed up will be used to reduce notes payable, and the other half will be used to reduce common equity. Therefore, notes payable will be reduced by $100,000 to a new level of $100,000.

Step 4: Calculate the firm's new liabilities level.
CL = A/P + Accruals + Notes payable
= $200,000 + $100,000 + $100,000
= $400,000.

Step 5: Calculate the firm's new current ratio with the improved inventory management.
CR = CA/CL
= $600,000/$400,000
= 1.5×.

75. Credit policy and ROE **Answer: c Diff: M R**

Use the DSO formula to calculate accounts receivable under the new policy as 36 = AR/($730,000/365) or AR = $72,000. Thus, $125,000 - $72,000 = $53,000 is the cash freed up by reducing DSO to 36 days. Retiring $53,000 of long-term debt leaves $247,000 in long-term debt. Given a 10% interest rate, interest expense is now $247,000(0.1) = $24,700. Thus, EBT = EBIT - Interest = $70,000 - $24,700 = $45,300. Net income is $45,300(1 - 0.3) = $31,710. Thus, ROE = $31,710/$200,000 = 15.86%.

76. Du Pont equation **Answer: d Diff: M**

Before: Equity multiplier = 1/(1 - D/A) = 1/(1 - 0.5) = 2.0.
ROE = (PM)(Assets turnover)(EM) = (10%)(0.25)(2.0) = 5%.

After: [ROE = 2(5%) = 10%]:
10% = (12%)(0.25)(EM)
EM = 3.33 = A/E.

E/A = 1/3.33 = 0.3.

D/A = 1 − 0.3 = 0.7 = 70%.

77. Sales and extended Du Pont equation **Answer: a Diff: M**

NI/E = 15%; D/A = 40%; E/A = 60%; A/E = 1/0.6 = 1.6667; NI/S = 5%.

Step 1: Determine total assets turnover from the extended Du Pont equation:

$$\text{NI/S} \times \text{S/TA} \times \text{A/E} = \text{ROE}$$
$$(5\%)(\text{S/TA})(1.6667) = 15\%$$
$$0.0833\ \text{S/TA} = 15\%$$
$$\text{S/TA} = 1.8.$$

Step 2: Determine sales from the total assets turnover ratio:

$$\text{S/TA} = 1.8$$
$$\text{S/\$800} = 1.8$$
$$\text{S} = \$1{,}440 \text{ million.}$$

78. Net income and Du Pont equation **Answer: c Diff: M N**

Step 1: Calculate total assets from information given.
Sales = $10 million.

$$3.5\times = \text{Sales/TA}$$
$$3.5\times = \frac{\$10{,}000{,}000}{\text{Assets}}$$
$$\text{Assets} = \$2{,}857{,}142.8571.$$

Step 2: Calculate net income.
There is no debt, so Assets = Equity = $2,857,142.8571.

$$\text{ROE} = \text{NI/S} \times \text{S/TA} \times \text{TA/E}$$
$$0.15 = \text{NI}/\$10{,}000{,}000 \times 3.5 \times 1$$
$$0.15 = \frac{3.5\text{NI}}{\$10{,}000{,}000}$$
$$\$1{,}500{,}000 = 3.5\text{NI}$$
$$\$428{,}571.4286 = \text{NI}.$$

79. ROE **Answer: c Diff: T**

Given: New D/A = 0.55 Interest = $7,000
EBIT = $25,000 Tax rate = 40%
Sales = $270,000 TATO = 3.0

Recall the Du Pont equation: ROE = (PM)(TATO)(EM).
ROE = (ROA)(EM).
ROE = NI/Equity.

EBIT	$25,000	
Interest	7,000	(Given)
EBT	$18,000	
Taxes (40%)	7,200	($18,000 × 40%)
NI	$10,800	

TATO = Sales/Total assets
Total assets = Sales/TATO = $270,000/3 = $90,000.

Equity = [1 - (D/A)](Total assets)
Equity = [1 - 0.55](Total assets)
Equity = 0.45($90,000) = $40,500.

ROE = NI/Equity = $10,800/$40,500 = 26.67%.

80. ROE **Answer: d Diff: T**

Industry average inventory turnover = 6 = Sales/Inventories.
To match this level: Inventories = Sales/6
$3,000,000/6 = $500,000.

Current inventories = $1,000,000. Reduction in inventories = $1,000,000 - $500,000 = $500,000. This $500,000 is to be used to reduce debt.

New debt level = $4,000,000 - $500,000 = $3,500,000.
Interest on this level of debt = $3,500,000 × 0.1 = $350,000.

Look at the income statement to determine net income:

EBIT	$1,400,000
Interest	350,000
EBT	$1,050,000
Taxes (40%)	420,000
NI	$ 630,000

ROE = Net income/Equity = $630,000/$2,000,000 = 0.3150 or 31.50%.

81. ROE and financing **Answer: a Diff: T**

The firm is not using its "free" trade credit (that is, accounts payable (A/P)) to the same extent as other companies. Since it is financing part of its assets with 10% notes payable, its interest expense is higher than necessary.

Calculate the increase in payables:
Current (A/P)/Inventories ratio = $100/$500 = 0.20.
Target A/P = 0.60(Inventories) = 0.60($500) = $300.
Increase in A/P = $300 - $100 = $200.

Since the current ratio and total assets remain constant, total liabilities and equity must be unchanged. The increase in accounts payable must be matched by an equal decrease in interest-bearing notes payable. Notes payable decline by $200. Interest expense decreases by $200 × 0.10 = $20.

Construct comparative Income Statements:

	Old	New
Sales	$2,000	$2,000
Operating costs	1,843	1,843
EBIT	$ 157	$ 157
Interest	37	17
EBT	$ 120	$ 140
Taxes (40%)	48	56
Net income (NI)	$ 72	$ 84

ROE = NI/Equity = $72/$800 = 9%. $84/$800 = 10.5%.
New ROE = 10.5%.

82. ROE and refinancing **Answer: d Diff: T**

Relevant information: Old ROE = NI/Equity = 0.06 = 6%.
Sales = $300,000; EBIT = 0.11(Sales) = 0.11($300,000) = $33,000.
Debt = $200,000; D/A = 0.80 = 80%.
Tax rate = 40%.
Interest rate change: Old bonds 14%; new bonds 10%.

Calculate total assets and equity amounts:
Since debt = $200,000, total assets = $200,000/0.80 = $250,000.
Equity = 1 - D/A = 1 - 0.80 = 0.20.
Equity = E/TA × TA = 0.20 × $250,000 = $50,000.

Construct comparative Income Statements from EBIT, and calculate new ROE:

	Old	New
EBIT	$33,000	$33,000
Interest	28,000	20,000
EBT	$ 5,000	$13,000
Taxes (40%)	2,000	5,200
Net income	$ 3,000	$ 7,800

New ROE = NI/Equity = $7,800/$50,000 = 0.1560 = 15.6%.

83. TIE ratio **Answer: d Diff: T**

$$TIE = \frac{EBIT}{I} = ?$$

TA Turnover = S/A = 2

S/$10,000 = 2

S = $20,000.

$$\frac{TD}{TA} = 0.6;$$

TD = 0.6($10,000)

Debt = $6,000.

I = $6,000(0.1) = $600.

$$PM = \frac{NI}{S} = 3\%$$

$$PM = \frac{NI}{\$20,000} = 0.03$$

NI = $600.

$$EBT = \frac{\$600}{(1 - 0.4)} = \$1,000.$$

EBIT	$1,600
Interest	600
EBT	$1,000
Taxes (40%)	400
NI	$ 600

TIE = $1,600/$600 = 2.67.

84. Current ratio **Answer: e Diff: T**

Old DSO = 40; CA = $2,500,000; CA/CL = 1.5; AR = $1,600,000.

Step 1: Calculate average daily sales:
DSO = AR/Average daily sales
40 = $1,600,000/Average daily sales
$40,000 = Average daily sales.

Step 2: Calculate the new level of accounts receivable when DSO = 30:
30 = AR/$40,000
$1,200,000 = AR.
So, the change in receivables will be $1,600,000 – $1,200,000 = $400,000.

Step 3: Calculate the old level of current liabilities:
Current ratio = CA/CL
1.5 = $2,500,000/CL
$1,666,667 = CL.

Step 4: Calculate the new current ratio:
The change in receivables will cause a reduction in current assets of $400,000 and a reduction in current liabilities of $400,000.
CA new = $2,500,000 - $400,000 = $2,100,000.
CL new = $1,666,667 - $400,000 = $1,266,667.
CR new = $2,100,000/$1,266,667 = 1.66.

85. P/E ratio and stock price **Answer: b Diff: T**

Here are some data on the initial situation:
EPS = $50/20 = $2.50.
Stock price = $2.50(8) = $20.

If XYZ had the industry average inventory turnover, its inventory balance would be:

$$\text{Turnover} = 5 = \frac{\text{Sales}}{\text{Inv}} = \frac{\$1,000}{\text{Inv}}$$

Inv = $1,000/5 = $200.
Therefore, inventories would decline by $100.

The income statement would remain at the initial level. However, the company could now repurchase and retire 5 shares of stock:

$$\frac{\text{Funds available}}{\text{Price/share}} = \frac{\$100}{\$20} = 5 \text{ shares.}$$

Thus, the new EPS would be:

$$\text{New EPS} = \frac{\text{Net income}}{\text{Shares outstanding}} = \frac{\$50}{20 - 5} = \$3.33.$$

The new stock price would be:
New price = New EPS(P/E) = $3.33(8) = $26.67.
Stock price increase = $26.67 - $20.00 = $6.67.

86. Du Pont equation and debt ratio **Answer: e Diff: T**

$$\frac{NI}{S} \times \frac{S}{A} \times \frac{A}{EQ} = ROE.$$

Data for A:

$$\frac{NI}{\$1,000} \times \frac{\$1,000}{\$500} \times \frac{\$500}{0.7(\$500)} = 0.15$$

$$\frac{NI}{0.7(\$500)} = 0.15 = NI = \$52.50.$$

$$\therefore ROE = \frac{NI}{S} = \frac{\$52.50}{\$1,000} = 0.0525 = 5.25\%.$$

Data for B:

$$\frac{NI}{S} \times \frac{S}{A} \times \frac{A}{EQ} = 0.30$$

$$0.0525 \times 2 \times \frac{\$500}{EQ} = 0.30$$

$$0.1050 \times \frac{\$500}{EQ} = 0.30$$

$$\frac{\$500}{EQ} = 2.8571$$

Equity = $175.

Debt = $500 - $175 = $325.
Therefore, D/A = $325/$500 = 0.65 or 65%.

87. Financial statement analysis **Answer: a Diff: T**

Sales	$15,000
Cost of goods sold	
EBIT	$ 1,065
Interest	465
EBT	$ 600
Taxes (35%)	210
NI	$ 390

$$BEP = \frac{EBIT}{TA} = \frac{EBIT}{\$8,000} = 0.133125; \ EBIT = \$1,065.$$

Now fill in: EBIT = $1,065.

Interest = EBIT - EBT = $1,065 - $600 = $465.

$$\frac{D}{A} = \frac{D}{\$8,000} = 0.45; \ D = 0.45(\$8,000) = \$3,600.$$

$$\text{Interest rate} = \frac{\text{Interest}}{\text{Debt}} = \frac{\$465}{\$3,600} = 0.1292 = 12.92\%.$$

88. EBIT **Answer: e Diff: T**

Write down equations with given data, then find unknowns:

$$\text{Profit margin} = \frac{NI}{S} = 0.06.$$

$$\text{Debt ratio} = \frac{D}{A} = \frac{D}{\$100,000} = 0.4;\ D = \$40,000.$$

$$\text{TA turnover} = \frac{S}{A} = 3.0 = \frac{S}{\$100,000} = 3;\ S = \$300,000.$$

Now plug sales into profit margin ratio to find NI:

$$\frac{NI}{\$300,000} = 0.06;\ NI = \$18,000.$$

Now set up an income statement:

Sales	$300,000	
Cost of goods sold		
EBIT	$ 33,200	(EBIT = EBT + Interest)
Interest	3,200	($40,000(0.08) = $3,200)
EBT	$ 30,000	(EBT = $18,000/(1 - T) = $30,000)
Taxes (40%)	12,000	
NI	$ 18,000	

89. Sales increase needed **Answer: b Diff: T N**

You need to work backwards through the income statement to solve this problem.

The new NI will be: ($1,800,000)(1.25) = $2,250,000.

Now find EBT:

$$(EBT)(1 - T) = NI$$
$$EBT = NI/(1 - T)$$
$$= \$2,250,000/(1 - 0.4)$$
$$= \$3,750,000.$$

Now find EBIT:

$$EBIT - I = EBT$$
$$EBIT = EBT + I$$
$$EBIT = \$3,750,000 + \$1,500,000$$
$$= \$5,250,000.$$

Now find Sales:

$$(Sales)(Operating\ Margin) = EBIT$$
$$Sales = EBIT/Operating\ Margin$$
$$= \$5,250,000/0.4$$
$$= \$13,125,000.$$

Therefore, sales need to rise to $13,125,000. How much of an increase is this?

$13,125,000/$12,000,000 = 1.09375. Therefore, sales have gone up by 9.375% (rounded to 9.38%).

90. Debt ratio and Du Pont analysis **Answer: c Diff: M N**

The Du Pont analysis of return on equity gives us:

ROE = ROA × EM
14% = 10% × EM
1.4 = EM.

From the equity multiplier (A/E), we can calculate the debt ratio:

1.4 = A/E
E/A = 1/1.4
E/A = 0.7143.

D/A = 1 − E/A
D/A = 1 − 0.7143
D/A = 0.2857 = 28.57%.

91. Profit margin and Du Pont analysis **Answer: a Diff: E N**

Using the Du Pont analysis again, we can calculate the profit margin.

ROE = PM × TATO × EM
14% = PM × 5 × 1.4
14% = PM × 7
2% = PM.

92. ROA **Answer: d Diff: M N**

ROA = NI/Assets. Total assets = $3,200,000,000 (from the balance sheet).

We, know ROE = NI/Common equity = 0.20, with Common equity = $900,000,000 (from the balance sheet).

0.20 = NI/$900,000,000
NI = $180,000,000.

So, ROA = $180,000,000/$3,200,000,000 = 0.05625, or 5.625%.

93. Current ratio **Answer: b Diff: M N**

Recall the current ratio is CA/CL = $900,000,000/$800,000,000 = 1.125.

The plan looks like this: Debit Fixed assets $300,000,000
Credit Notes payable $300,000,000

So, current liabilities increase by $300 million, while current assets do not change.

So, the new current ratio is $900,000,000/($800,000,000 + $300,000,000) = $900,000,000/$1,100,000,000 = 0.818.

94. Miscellaneous concepts **Answer: e Diff: E N**

The correct answer is statement e. The current ratio in 2002 was 1.77, while the current ratio in 2001 was 1.64. Hence, the current ratio was higher in 2002. The debt ratio was 0.4773 in 2002 and 0.5250 in 2001, so the debt ratio decreased from 2001 to 2002. The firm issued $300 million in new common stock in 2002.

95. Net income **Answer: b Diff: E N**

To determine 2002 net income, use the following equation:

Ending retained earnings = Beginning RE + NI − Dividends paid

$800,000,000 = $700,000,000 + NI − $50,000,000

$150,000,000 = NI.

96. Sales, DSO, and inventory turnover **Answer: b Diff: M N**

Step 1: One of our initial conditions is that inventory turnover (S/Inv.) < 6.0, hence:

Sales/Inventory < 6.0

Sales/$850,000,000 < 6.0

Sales < $5,100,000,000.

Step 2: Our second initial condition is that DSO < 50, hence:

$$\begin{aligned} AR/(Sales/365) &< 50.0 \\ \$450,000,000/(Sales/365) &< 50.0 \\ [(\$450,000,000)(365)]/Sales &< 50.0 \\ (\$450,000,000)365 &< 50(Sales) \\ [(\$450,000,000)(365)]/50 &< Sales \\ Sales &> \$3,285,000,000. \end{aligned}$$

So, the most likely estimate of the firm's 2002 sales would fall between $3,285,000,000 and $5,100,000,000. Only statement b meets this requirement.

97. Financial statement analysis **Answer: a Diff: E N**

The correct answer is statement a. The current ratio in 2002 is 1.02, while in 2001 it is 0.785. So, statement a is correct. For statement b, assume that sales are X. The inventory turnover ratio for 2002 is X/$1,000,000 and X/$700,000 in 2001. So, the inventory turnover ratio for 2001 is higher than in 2002. (If that's not clear, try X = $500,000 or any other number.) Thus, statement b is incorrect. The debt ratio in 2002 is 0.596, while in 2001 it's 0.672, so statement c is incorrect.

98. Current ratio **Answer: c Diff: M N**

Step 1: Determine actual 2002 sales:

$$\begin{aligned} \text{DSO} &= \text{AR}/(\text{Sales}/365) \\ 40 &= \$432{,}000/(\text{Sales}/365) \\ 40(\text{Sales})/365 &= \$432{,}000 \\ 40(\text{Sales}) &= \$157{,}680{,}000 \\ \text{Sales} &= \$3{,}942{,}000. \end{aligned}$$

Step 2: Determine new accounts receivable balance if DSO = 30 and sales remain the same:

$$\begin{aligned} 30 &= \text{AR}/(\$3{,}942{,}000/365) \\ 30 &= \text{AR}/\$10{,}800 \\ \text{AR} &= \$324{,}000. \end{aligned}$$

Step 3: Determine the amount of freed-up cash and the new level of accounts payable.

Freed-up cash = $432,000 - $324,000 = $108,000.

New AP = $700,000 - $108,000 = $592,000.

Step 4: Determine the new current ratio:

$$\begin{aligned} \text{CR} &= (\$100{,}000 + \$324{,}000 + \$1{,}000{,}000)/(\$592{,}000 + \$800{,}000) \\ &= \$1{,}424{,}000/\$1{,}392{,}000 \\ &= 1.023. \end{aligned}$$