Reading 39

# FINANCIAL ANALYSIS TECHNIQUES

**1. (C) $ 8.8 million.**

**Explanation**

20X8 sales are expected to be $ 110 million [$ 100 million × 1.1] and COGS is expected to be $ 44 million [$110 million sales × 40%]. With 73 days of inventory on hand, average inventory is $8.8 million [($44 million COGS / 365) × 73 days].

**(Module 39.5, LOS 39.f)**

**2. (C) 9.6%.**

**Explanation**

Net income after taxes = 300 × 0.18 = 54

Equity = 1400 × 0.40 = 560

ROE = Net Income / Equity = 54 / 560 = 0.0964 = 9.6%

**(Module 39.2, LOS 39.b)**

**3. (B) 183.**

**Explanation**

Receivables turnover = 1,500(sales) / 750(receivables) = 2.0

Average receivables collection period = 365 / 2 = 182.5 or 183

**(Module 39.2, LOS 39.b)**

**4. (C) 4 times.**

**Explanation**

ICR = operating profit ÷ I = EBIT ÷ I = 100,000 ÷ 25000 = 4

**(Module 39.2, LOS 39.b)**

**5. (A) inventory.**

**Explanation**

Current ratio = current assets / current liabilities

Quick ratio = (current assets – inventories) / current liabilities

Marketable securities are included among current assets in both ratios. Neither ratio considers non-current assets.

**(Module 39.2, LOS 39.b)**

**6. (A) 3 million.**

**Explanation**

| | | |
|---|---|---|
| Cash ratio | = | (cash + marketable securities) / current liabilities |
| 0.20 | = | ($ 10,000,000 + $2,000,000) / current liabilities |
| current liabilities | = | $ 12,000,000 / 0.2 = $60,000,000 |
| Quick ratio | = | [cash + marketable securities + receivables] / $ 60,000,000 |
| 0.25 | = | [$ 10,000,000 + $2,000,000 + receivables] / $ 60,000,000 |
| ($60,000,000)(0.25) | = | $ 12,000,000 + receivables |
| $ 15,000,000 | = | $ 12,000,000 + receivables |
| $ 15,000,000 | = | $ 12,000,000 = receivables |
| $ 3,000,000 | = | receivables |

**(Module 39.2, LOS 39.b)**

**7. (B) 3.25**

**Explanation**

First, calculate beginning inventory given COGS, purchases, and ending inventory. Beginning inventory was $ 35 million [$130 million COGS + $ 45 million ending inventory – $140 million purchases]. Next, calculate average inventory of $40 million [($ 35 million beginning inventory + $ 45 million ending inventory) / 2]. Finally, calculate inventory turnover of 3.25 [$130 million COGS / $ 40 million average inventory].

**(Module 39.2, LOS 39.b)**

**8. (A) Firm P has steadier sales than Firm Q.**

**Explanation**

The CV is a relative measure of variability, or risk, based on standard deviation, calculated as the standard deviation of an item/mean of an item (e.g., standard deviation of sales/mean sales). A higher figure indicates higher variability. The CV does not give information about the actual size of a firm; we can therefore not conclude whether Firm P has a lower net income than Firm Q. As Firm P has a lower CV sales, this shows sales are steadier. Firm P and Q have the same CV operating income; however, as Firm P's sales are steadier, this indicates that this firm's operating costs must be more volatile.

**(Module 39.5, LOS 39.e)**

**9. (A) increase by approximately 2 days.**

**Explanation**

cash conversion cycle (CCC) = days of sales outstanding + days of inventory on hand − number of days of payables

$$\text{number of days of payables} = \frac{365}{\text{payables turnover}} = \frac{365}{11} = 33.18 \text{ days}$$

$$\frac{365}{10} = 36.5 \text{days}$$

Since the payables payment period increases by 3.32 days and receivables days increases by 5, CCC increases by 1.68 days.

**(Module 39.2, LOS 39.b)**

**10. (A) 20%.**

**Explanation**

Operating profit margin = ($1,000 revenues – $600 COGS – $200 operating expenses) / $1,000 revenues = $200 / $1000 = 0.2

**(Module 39.2, LOS 39.b)**

**11. (C) One is used primarily to assess its ability to meet short-term obligations, and the other is used primarily to assess its ability to meet long-term obligations.**

**Explanation**

The quick ratio is a liquidity ratio. Liquidity ratios are used to measure a firm's ability to meet its short-term obligations. The debt-to-capital ratio is a solvency ratio. Solvency ratios are used to measure a firm's ability to meet its longer-term obligations.

**(Module 39.2, LOS 39.b)**

**12. (C) only one is correct.**

**Explanation**

Vertical common-size statements enable the analyst to make better comparisons of two firms of different sizes that operate in the same industry. Horizontal common-size financial statements express each line as a percentage of the base year figure; thus, horizontal common-size statements can be used to identify structural changes in a firm's operating results and financial condition over time.

**(Module 39.1, LOS 39.a)**

**13. (B) gross profit margin increased in 20X1 but net profit margin decreased.**

**Explanation**

Royal's gross profit margin (gross profit / sales) was higher in 20X1 (34 / 82 = 41.5%) than in 20X0 (31 / 78 = 39.7%), but net profit margin (earnings after taxes / sales) declined from 7 / 78 = 9.0% in 20X0 to 6 / 82 = 7.3% in 20X1.

**(Module 39.3, LOS 39.c)**

**14. (A) Sales/Total Assets.**

**Explanation**

Sales/Total Assets, or Total Asset Turnover is a measure of operating efficiency, not operating profitability.

**(Module 39.2, LOS 39.b)**

**15. (A) Gross profit margin.**

**Explanation**

The gross profit margin is used to measure a firm's operating profitability, not operating efficiency.

**(Module 39.2, LOS 39.b)**

**16. (B) 1.29**

**Explanation**

Inventory turnover = 1,100(COGS) / 850(inventory) = 1.29

**(Module 39.2, LOS 39.b)**

**17. (B) Asset turnover.**

**Explanation**

The three-part DuPont approach is as follows: net profit margin × asset turnover × leverage ratio, where the leverage ratio is assets-to-equity.

**(Module 39.4, LOS 39.d)**

**18. (C) Current ratio.**

**Explanation**

Total asset turnover measures operating efficiency and interest coverage measures a company's financial risk.

**(Module 39.2, LOS 39.b)**

**19. (C) receivables turnover is higher.**

**Explanation**

**Higher receivables turnover is an indicator of better receivables liquidity since** receivables are converted to cash more rapidly. A lower quick ratio is an indication of less liquidity. Lower trade payables could be related to better liquidity, but could also be consistent with very poor liquidity and a requirement from its suppliers of cash payment**.**

**(Module 39.3, LOS 39.c)**

**20. (B) 2.4 26.8%**

**Explanation**

The current ratio is equal to 2.4 [(4.8% cash + 14.9% accounts receivable + 49.4% inventory) / (15.0% accounts payable + 13.8% accrued liabilities)]. This

ratio can be calculated from the common size balance sheet because the percentages are all on the same base amount (total). Return on equity is equal to net income divided by average total equity. Since this ratio mixes an income statement item and a balance sheet item, it is necessary to convert the common-size inputs to dollars. Net income is $11,211,200 ($215,600,000 × 5.2%) and average equity is $41,772,000 [($95,300,000 × 48.0%) + $37,800,000] / 2. Thus, 2007 ROE is 26.8% ($11,211,200 net income / $41,772,000 average equity).

**(Module 39.2, LOS 39.b)**

**21. (B) Interest burden.**

**Explanation**

EBT / EBIT is the interest burden, the second component in the extended DuPont equation. It shows that more leverage does not always lead to higher ROE. As leverage rises, so does the interest burden. The positive effects of leverage can be offset by the higher interest payments that accompany higher levels of debt. Net income / EBT is called the tax burden and is equal to (1 – tax rate). The higher the tax rate, the lower the ROE level. EBIT / revenue is called the EBIT margin or operating margin.

**(Module 39.4, LOS 39.d)**

**22. (C) Return on equity has improved.**

**Explanation**

Leverage increased as measured by the debt-to-equity ratio from 2.25 in 2005 to 3.68 in 2007. Gross profit margin declined from 20.0% in 2005 to 18.5% in 2007. Return on equity has improved since 2005. One measure of ROE is ROA × financial leverage. Financial leverage (assets / equity) can be derived by adding 1 to the debt-to-equity ratio. In 2005, ROE was 23.4% [7.2% ROA × (1 + 2.25 debt-to-equity)]. In 2007, ROE was 27.6% [5.9% ROA × (1 + 3.68 debt-to-equity)].

**(Module 39.3, LOS 39.c)**

**23. (C) Current Ratio.**

**Explanation**

The current ratio is a liquidity measure. Equity turnover and net profit margin are used primarily as measures of a company's operating performance.

**(Module 39.2, LOS 39.b)**

**24. (B) 76.7 days.**

**Explanation**

Average collection period = 365 / receivables turnover

Receivables turnover = sales / average receivables = 3,000 / 630 = 4.76

Average receivables collection period = 365 / 4.76 = 76.65

**(Module 39.2, LOS 39.b)**

**25. (B) Sales per square foot.**

**Explanation**

Sales per square foot is commonly used in the retail industry and would serve as a good comparison. While growth in same-store sales may be useful to compare one company's different locations year-over-year (as it excludes any new locations), it would not be helpful for external comparisons. Sales per employee is generally used in service- or consultancy-based companies rather than retail.

**(Module 39.5, LOS 39.e)**

**26. (A) sales.**

**Explanation**

Vertical common-size analysis of an income statement is typically done by stating each item as a percentage of sales. Stating each item on a financial statement as a percentage of its value in a base period is referred to as horizontal common-size analysis.

**(Module 39.1, LOS 39.a)**

**27. (C) 252.7 days.**

**Explanation**

COGS = (0.65) ($1,000,000) = $650,000

Inventory turnover = COGS / Inventory = $650,000 / $450,000 = 1.4444

Average Inventory Processing Period = 365 / 1.4444 = 252.7 days

**(Module 39.2, LOS 39.b)**

**28. (A) 79 days.**

**Explanation**

Cash conversion cycle = receivables days + inventory processing days – payables payment period.

Receivables days = 365 / receivables turnover = 365 / 10 = 36.5 days.

Inventory processing days = 365 / inventory turnover = 365 / 5 = 73.0 days.

Payables payment period = 365 / payables turnover = 365 / 12 = 30.4 days.

Cash collection cycle = 36.5 + 73.0 – 30.4 = 79.1 days.

**(Module 39.2, LOS 39.b)**

**29. (C) $ 83,333,333.**

**Explanation**

One of the many ways ROE can be expressed is: ROE = net income / equity

0.12 = $10,000,000 / equity

Equity = $10,000,000 / 0.12 = $83,333,333

**(Module 39.4, LOS 39.d)**

**30. (A) 0.50.**

**Explanation**

Operating profit margin = (EBIT / sales) = (1,500 / 3,000) = 0.5

**(Module 39.2, LOS 39.b)**

**31. (C) 2.0.**

**Explanation**

Receivables turnover = 1,500(sales) / 750(receivables) = 2.0

**(Module 39.2, LOS 39.b)**

**32. (B) business risk.**

**Explanation**

CV for operating income = standard deviation of operating income / mean operating income. Comparing coefficients of variation among peers can aid the analyst in assessing both the relative and absolute degree of business risk a firm faces in generating income. Credit risk is the risk associated with losses stemming from the failure of a borrower to make payments of interest or principal. Financial risk looks at the capital structure of a firm, which is not included in operating income.

**(Module 39.5, LOS 39.e)**

**33. (B) current liabilities.**

**Explanation**

Current liabilities are used in the denominator for the: current, quick, and cash ratios.

**(Module 39.2, LOS 39.b)**

**34. (B) 0.62.**

**Explanation**

There are several ways to approach this question but the easiest way is to recognize that ROE = NI / average equity thus ROE = 944 / 1,519 = 0.622.

If using the traditional DuPont, ROE = (NI / Sales) × (Sales / Assets) × (Assets / Equity):

ROE = (944 / 3,000) × (3,000 / 2,920) × (2,920 / 1,519) = 0.622

The 5-part Dupont formula gives the same result:

ROE = (net income / EBT) (EBT / EBIT) (EBIT / revenue) (revenue / total assets) (total

assets / total equity)

Where EBIT = EBT + interest = 1,349 + 151 = 1,500

ROE 2007 = (944 / 1,349) (1,349 / 1,500) (1,500 / 3,000) (3,000 / 2,920) (2,920 / 1,519) = 0.622

**(Module 39.3, LOS 39.c)**

**35. (A) 4.65 0.93**

**Explanation**

Current ratio = [100(cash) + 750(accounts receivable) + 300(marketable securities) + 850(inventory)] / [300(AP) + 130(short term debt)] = (2000 / 430) = 4.65 Cash ratio = [100(cash) + 300(marketable securities)] / [300(AP) + 130(short term debt)] = (400 / 430) = 0.93

**(Module 39.2, LOS 39.b)**

**36. (B) 52 days.**

**Explanation**

Days of sales outstanding = 365 / 10 = 36.5 days
Days of inventory on hand = 365 / 8 = 45.6 days
Days of payables = 365 / 12 = 30.4 days
Cash conversion cycle = 36.5 + 45.6 – 30.4 = 51.7 days

**(Module 39.2, LOS 39.b)**

**37. (C) 80.38 days.**

**Explanation**

The cash conversion cycle = average receivables collection period + average inventory processing period – payables payment period. The average receivables collection period = 365 / average receivables turnover or 365 / 10.5 = 34.76. The average inventory processing period = 365 / inventory turnover or 365 / 4 = 91.25. The payables payment period = 365 / payables turnover ratio = 365 / 8 = 45.63. Putting it all together: cash conversion cycle = 34.76 + 91.25 – 45.63 = 80.38.

**(Module 39.2, LOS 39.b)**

**38. (B) 95 days of sales outstanding.**

**Explanation**

Receivables turnover = $1,000,000 / $ 260,000 = 3.840
Days of sales outstanding = 365 / 3.840 = 95.05 days.
Inventory turnover = $ 800,000 / $ 400,000 = 2
Days of inventory on hand = 365 / 2 = 182.5 days.
Payables turnover ratio = $ 800,000 / $600,000 = 1.333.
Number of days of payables = 365 / 1.333 = 273.82 days.

**(Module 39.2, LOS 39.b)**

**39. (B) higher than G Company's because its interest coverage ratio is less than one third of G Company's.**

**Explanation**

E Company's interest coverage ratio (EBIT / interest expense) is (30 / 20) = 1.5. G Company's interest coverage ratio is (25 / 5) = 5.0. Higher interest coverage means greater ability to cover required interest and lease payments. Note that 1.5 / 5.0 = 0.30, which means the interest coverage for E Company is less than 1/3 that of G Company.

**(Module 39.3, LOS 39.c)**

**40. (B) sum of the time it takes to sell inventory and the time it takes to collect accounts receivable.**

**Explanation**

Cash conversion cycle = (average receivables collection period) + (average inventory processing period) – (payables payment period)

**(Module 39.2, LOS 39.b)**

**41. (C) 20%.**

**Explanation**

$$\text{ROE} = \frac{\text{Net Income}}{\text{Equity}} = \frac{0.16(1{,}500)}{(1-0.40)(2{,}000)} = 0.20 \text{ or } 20\%$$

If the debt ratio (TD/TA) is equal to 40% and the firm has no preferred stock, the percentage of equity is 1 − 0.40, or 60%.

**(Module 39.2, LOS 39.b)**

**42. (A) banks.**

**Explanation**

Net interest margin (interest income / interest-earning assets) is a ratio typically used to analyze lending institutions.

**(Module 39.5, LOS 39.e)**

**43. (A) Debt to total capital.**

**Explanation**

The debt to total capital ratio is not part of the original DuPont system. The firm's leverage is accounted for through the equity multiplier.

**(Module 39.4, LOS 39.d)**

**44. (A) 1.1 0.8 0.6**

**Explanation**

Current ratio = (0.4 + 2.0 + 0.8 + 1.2) / 4.0 = 1.1.
Quick ratio = (0.4 + 2.0 + 0.8) / 4.0 = 0.8.
Cash ratio = (0.4 + 2.0) / 4.0 = 0.6.

**(Module 39.2, LOS 39.b)**

**45. (B) liquid.**

**Explanation**

Based on the data provided, the analyst can conclude that the company has better shortterm liquidity than the industry average (i.e., its competitors) based on the current ratio. The analyst can conclude that Iridescent Carpeting has weaker profitability than its competitors based on the net profit margin and return on equity. The analyst can also conclude that the company has less financial leverage (risk) than the industry average based on the total debt / total capital ratio.

**(Module 39.3, LOS 39.c)**

**46. (C) Inventory.**

**Explanation**

Quick ratio = (cash + marketable securities + receivables) / current liabilities

Current ratio = (cash + marketable securities + receivables + inventory) / current liabilities

**(Module 39.2, LOS 39.b)**

**47. (C) 53 days.**

**Explanation**

Cash conversion cycle = days of sales outstanding + days of inventory on hand – number of days of payables = 37 + 46 – 30 = 53 days.

**(Module 39.2, LOS 39.b)**

**48. (A) Higher Higher**

**Explanation**

Available-for-sale securities are reported on the balance sheet at fair value and any unrealized gains and losses bypass the income statement and are reported as an adjustment to equity. Thus, a decrease in fair value will result in a higher ROA ratio (lower assets). Trading securities are also reported on the balance sheet at fair value; however, the unrealized gains and losses are recognized in the income statement. Therefore, an increase in fair value will result in higher ROA. In this case, both the numerator and denominator are higher; however, since the ratio is less than one, the percentage change of the numerator is greater than the percentage change of the denominator, so the ratio will increase.

**(Module 39.2, LOS 39.b)**

**49. (A) Both ratios will decrease.**

**Explanation**

As an example, start with CA = 2, CL = 1, and Inv = 1.2. We begin with a current ratio of 2 and a quick ratio of 0.8. If the firm increases short-term bank debt (a current liability) by 1 to buy inventory (a current asset) of 1, both the numerator and denominator increase by 1, resulting in (new current ratio) and (new quick ratio).

**(Module 39.2, LOS 39.b)**

**50. (B) A company that has an inventory turnover of 6 times, a receivables turnover of 9 times, and a payables turnover of 12 times will have a cash conversion cycle of approximately 71 days.**

Explanation

The cash conversion cycle is (365 / 6) + (365 / 9) − (365 / 12) = 60.8 + 40.6 − 30.4 = 71 days. ROA is less than ROE when net income is positive and debt is present. The fact that a company has a high gross profit margin does not necessarily mean it will have a high net profit margin. A company with a high gross margin may have a low (or negative) net margin if its operating expenses are high.

**(Module 39.2, LOS 39.b)**

**51. (B) 25 days.**

**Explanation**

Average receivables collection period = 365 / receivables turnover, which is 22.81 days for the industry (= 365 / 16). If Q-Tell's receivables turnover is less than 16, its average days collection period must be greater than 22.81 days.

**(Module 39.3, LOS 39.c)**

**52. (C) will exceed a portion of the time, over a specific period of time.**

**Explanation**

Value at risk is an estimate of the dollar size of the loss that a firm will exceed some specific percentage of the time, over a specific period of time. While a firm may survive incurring a large loss and may be able to reduce its likelihood of large losses with appropriate measures, these are not the most accurate definitions.

**(Module 39.5, LOS 39.e)**

**53. (C) lengthens.**

**Explanation**

CCC = collection period + Inv Period – Payment period.

Payment period = (365 / payables turnover) = (365 / 11) = 33; (365 / 12) = 30. This means the CCC actually increased to 83.

**(Module 39.2, LOS 39.b)**



**54. (A) Activity ratio Solvency ratio**

**Explanation**

Revenue divided by average working capital, also known as the working capital turnover ratio, is an activity ratio. Average total assets divided by average total equity, also known as the financial leverage ratio, is a solvency ratio.

**(Module 39.2, LOS 39.b)**

**55. (B) 1.44.**

**Explanation**

There are many different ways to illustrate ROE one of which is:

ROE = (net profit margin) (asset turnover) (equity multiplier)

0.18 = (0.05) (2.5) (equity multiplier)

0.18 ÷ [(0.05) (2.5)] = equity multiplier

0.18 ÷ 0.125 = equity multiplier

0.18 ÷ 0.125 = 1.44

**(Module 39.4, LOS 39.d)**

**56. (B) $1,200,000.**

**Explanation**

The 25% GP indicates that the cost of goods sold is 75% of sales. The inventory is derived from the difference between current ratio and the quick ratio. The current ratio indicates that the current assets are $ 200,000 and the quick assets are $125,000. The difference represents the inventory of $ 75,000. The inventory turnover is used to obtain cost of goods sold of $ 900,000. The cost of goods sold is 75% of sales, indicating that sales are $1,200,000.

**(Module 39.2, LOS 39.b)**

**57. (C) Calculation of ratios involves a large degree of subjectivity.**

**Explanation**

There is not a great deal of subjectivity involved in calculating ratios. The mechanical formulas for the calculations are fairly standard and objective for the activity, liquidity, solvency, and profitability ratios, for instance. On the other hand, determining the target or comparison value for a ratio is difficult as it requires some range of acceptable values and that introduces an element of subjectivity. Conclusions cannot be made from viewing one set of ratios as all ratios must be viewed relative to one another in order to make meaningful conclusions. It can be difficult to find comparable industry ratios, especially when analysing companies that operate in multiple industries.

**(Module 39.1, LOS 39.a)**

**58. (C) $ 40,000.**

**Explanation**

The traditional DuPont system is given as:

ROE = (net profit margin) (asset turnover) (leverage ratio)

Solving for the net profit margin yields:

0.12 = (net profit margin) × (2) × (1.5)

0.04 = (net profit margin)

Recognizing that the net profit margin is equal to net income / revenue we can substitute that relationship into the above equation and solve for net income:

0.04 = net income / revenue = net income / $1,000,000

$40,000 = net income.

**(Module 39.4, LOS 39.d)**

**59. (B) $ 4.5 million.**

**Explanation**

Manhattan's quick assets were equal to $9 million ($15 million current assets – $6 million inventory). Given a quick ratio of 2.0, quick assets were twice the current liabilities. Thus, the current liabilities must have been $4.5 million ($9 million quick assets / 2.0 quick ratio).

**(Module 39.2, LOS 39.b)**

**60. (B) a range of target values for a ratio may be more appropriate than a single target value.**

**Explanation**

A range of target values for a financial ratio may be more appropriate that a single numerical target. Financial ratios are not useful when viewed in isolation and are only valid when compared to historical figures or peers. Comparing ratios among firms can be complicated by variations in accounting treatments used at each firm.

**(Module 39.1, LOS 39.a)**

**61. (C) 0.666.**

**Explanation**

Gross profit margin = (gross profit / net sales) = (2,000 / 3,000) = 0.666

**(Module 39.2, LOS 39.b)**

**62. (B) 26 days.**

**Explanation**

Cash conversion cycle = receivables collection period + inventory processing period – payables payment period.

Receivables collection period = (365 / 20) = 18

Inventory processing period = (365 / 16) = 23

Payables payment period = (365 / 24) = 15

Cash conversion cycle = 18 + 23 – 15 = 26

**(Module 39.2, LOS 39.b)**

**63. (B) 78%.**

**Explanation**

If equity equals 45% of assets and current liabilities equal 20% of assets, long-term debt must be 100 − 45 − 20 = 35% of assets.

$$\text{long-term debt to equity ratio} = \frac{\text{long term debt}}{\text{Total equity}} = \frac{0.35}{0.45} = 77.8\%$$

**(Module 39.2, LOS 39.b)**

**64. (C) net income/sales × sales/assets × assets/equity.**

**Explanation**

The traditional three-part DuPont decomposition of ROE is profit margin × asset turnover × financial leverage. Although ROE can also be decomposed as net income/assets × sales/equity × assets/sales, this is not the DuPont equation.

**(Module 39.4, LOS 39.d)**

**65. (B) of different size in the same industry.**

**Explanation**

Ratio analysis is a useful way of comparing companies that are similar in operations but different in size. Ratios of companies that operate in different industries are often not directly comparable. For companies that operate in several industries, ratio analysis is limited by the difficulty of determining appropriate industry benchmarks.

**(Module 39.1, LOS 39.a)**

**66. (C) 9.3%.**

**Explanation**

ROE = 150(NI) / [1000(common) + 620(RE)] = 150 / 1620 = 0.0926 or 9.3%

**(Module 39.4, LOS 39.d)**

**67. (B) 1.59 0.86**

**Explanation**

Current ratio = current assets / current liabilities = 12,297 / 7,735 = 1.59

Quick ratio = (cash + receivables) / current liabilities = 2,098 + 4,570 / 7,735 = 0.86

**(Module 39.2, LOS 39.b)**

**68. (A) cross-sectional analysis.**

**Explanation**

Comparing a company's ratios with those of its competitors is known as cross-sectional analysis.

**(Module 39.1, LOS 39.a)**

**69. (C) may have credit policies that are too strict.**

**Explanation**

The firm's average days of receivables should be close to the industry average. A significantly lower average days receivables outstanding, compared to its peers, is an indication that the firm's credit policy may be too strict and that sales are being lost to peers because of this. We cannot assume that stricter credit controls than the average for the industry are "better." We cannot conclude that credit sales are less, they may be more, but just made on stricter terms. The average days of receivables are only one component of the cash conversion cycle.

**(Module 39.3, LOS 39.c)**

**70. (C) 86 days.**

**Explanation**

2008 expected days of sales outstanding is 66 [365 / (5.0 × 1.1)], 2008 days of inventory on hand is 96 [365 / (4.0 × 0.95)], and 2008 days of payables is 76 [365 / (6.0 × 0.8)]. Expected cash conversion cycle is 86 days [66 days of sales outstanding + 96 days of inventory on hand – 76 days of payables].

**(Module 39.3, LOS 39.c)**

**71. (A) Statement #2 Statement #1**

**Explanation**

Horizontal common-size analysis involves expressing each line item as a percentage of the base-year figure. Vertical common-size analysis involves expressing each line item of the income statement as a percentage of revenue and each line item of the balance sheet as a percentage of ending total assets.

**(Module 39.1, LOS 39.a)**

**72. (C) operating profit.**

**Explanation**

Operating profit = earnings before interest and taxes (EBIT)

Gross profit = net sales – COGS

Net income = earnings after taxes = EAT

**(Module 39.2, LOS 39.b)**

**73. (B) 7.67 0.30**

**Explanation**

Interest coverage ratio = (EBIT / interest expense) = (115 / 15) = 7.67

Net profit margin = (net income / net sales) = (60 / 200) = 0.30

**(Module 39.2, LOS 39.b)**

**74. (C) will increase.**

**Explanation**

The DuPont decomposition (ROE = net profit margin × asset turnover × leverage ratio) shows that ROE will increase if asset turnover increases, assuming net profit margin and leverage are unchanged.

**(Module 39.4, LOS 39.d)**

**75. (A) 219.0 days.**

**Explanation**

Receivables turnover = $ 250,000 / $150,000 = 1.66667

Collection period = 365 / 1.66667 = 219 days

**(Module 39.2, LOS 39.b)**

**76. (B) Description #3 Description #2**

**Explanation**

Sensitivity analysis develops a range of possible outcomes as specific inputs are changed one at a time. Sensitivity analysis is also known as "what-if" analysis. Scenario analysis is based on a specific set of outcomes for multiple variables. Computer generated analysis, based on developing probability distributions of key variables, is known as simulation analysis.

**(Module 39.5, LOS 39.f)**

**77. (A) Only one of the ratios is a profitability ratio.**

**Explanation**

(Cash + short-term marketable investments + receivables) divided by average daily cash expenditures is known as the defensive interval ratio. The defensive interval ratio is a liquidity ratio that measures the firm's ability to pay cash expenditures in the absence of external cash flows, but does not directly measure profitability. EBIT / average total assets is one variation of the return on assets ratio. Return on assets is a profitability ratio that measures the efficiency of managing assets and generating profits.

**(Module 39.2, LOS 39.b)**

**78. (C) increase the quick ratio.**

**Explanation**

The quick ratio numerator is cash plus marketable securities plus accounts receivable, and the denominator is current liabilities. The numerator is unaffected by a change in inventory, while the denominator decreases with a decrease in accounts payable, so the quick ratio will increase.

**(Module 39.2, LOS 39.b)**

**79. (A) 30%.**

**Explanation**

Operating profit margin = (EBIT / net sales) = ($150,000 / $ 500,000) = 30%

**(Module 39.2, LOS 39.b)**

**80. (B) No effect Increase**

**Explanation**

Collecting receivables increases cash and decreases accounts receivable. Thus, current assets do not change and the current ratio is unaffected. Because the numerator of the cash ratio only includes cash and marketable securities, collecting accounts receivable increases the cash ratio.

**(Module 39.2, LOS 39.b)**

**81. (C) 4.65.**

**Explanation**

Current ratio = [100(cash) + 750(AR) + 300(marketable securities) + 850(inventory)] / [300(AP) + 130(short-term debt)] = (2,000 / 430) = 4.65

**(Module 39.2, LOS 39.b)**

**82. (B) $58.4 million.**

**Explanation**

Set up the cash conversion cycle formula and solve for the missing variable, sales. Days in payables is equal to 73 [365 / 5 accounts payable turnover].

Days in inventory is equal to 36.5 [365 / ($ 30 million COGS / $ 3 million average inventory)]. Given the cash conversion cycle, days in inventory, and days in payables, calculate days in receivables of 50 [13.5 days cash conversion cycle + 73 days in payables – 36.5 days in inventory]. Given days in receivables of 50 and average receivables of $ 8 million, sales are $ 58.4 million [($ 8 million average receivables / 50 days) × 365**].**

**(Module 39.2, LOS 39.b)**

**83. (C) decreases by approximately 3 days.**

**Explanation**

Cash conversion cycle (CCC) = days of sales outstanding + days of inventory on hand – number of days of payables. Days of sales outstanding = 365 / receivables turnover = 365 / 11 = 33.18; 365 / 12 = 30.42. This means the CCC decreases by 2.76 days.

**(Module 39.2, LOS 39.b).**

**84. (C) Net profit margin, asset turnover, equity multiplier.**

**Explanation**

The three ratios can be further decomposed as follows:

Net profit margin = net income/sales

Asset turnover = sales/assets

Equity multiplier = assets/equity

**(Module 39.4, LOS 39.d).**

**85. (A) 2.018.**

**Explanation**

Quick ratio = (cash + marketable securities + receivables) / CL = (450 + 0 + 660) / 550 = 2.018

**(Module 39.2, LOS 39.b)**

**86. (B) 3.15.**

**Explanation**

ROE in 20X4 was 0.18 × 1.75 × 1.5 = 0.4725.

If ROE for 20X5 is unchanged from 20X4, then:

0.10 × asset turnover × 1.5 = 0.4725

Asset turnover = 3.15.

**(Module 39.4, LOS 39.d)**

**87. (B) 0.78 $500**

**Explanation**

If equity equals 45% of assets, and current liabilities equals 20%, then long-term debt must be 35%. Long-Term Debt / Equity = 0.35 / 0.45 = 0.78

Working capital = CA – CL = 45% - 20% = 25% of assets

WC = 2,000(0.25) = $500

**(Module 39.2, LOS 39.b)**

**88. (C) 1.33 20.8%**

**Explanation**

Total asset turnover = sales / average assets = 5,000,000 / 3,750,000 = 1.33

Return on equity = net income / average equity

Net income = EBIT – interest – taxes = 800,000 – 160,000 – 256,000 = 384,000

ROE = 384,000 / 1,850,000 = 20.8%

**(Module 39.4, LOS 39.d)**

**89. (A) increase current assets by 100 or decrease current liabilities by 50.**

**Explanation**

For the current ratio to equal 2.0, current assets would need to move to $600 (or up by $100) or current liabilities would need to decrease to $250 (or down by $ 50). Remember that CA – CL = working capital (500 – 300 = 200).

**(Module 39.2, LOS 39.b)**

**90. (B) $ 50 million increase.**

**Explanation**

20X7 gross profit is equal to $100 million ($1 × 250 million units sold × 40% gross profit margin). The 10% price cut to $0.90 will increase cost of goods sold to 67% of sales [COGS = 0.6($1) = $ 0.60; $0.60 / $0.90 = 67%.]. As a result, gross profit will decrease to 33% of sales. If unit sales double in 20X8, gross profit will equal $150 million ($ 0.90 × 500 million units × 33% gross profit margin). Therefore, gross profit will increase $ 50 million ($150 million 20X8 gross profit – $100 million 20X7 gross profit).

**(Module 39.5, LOS 39.f)**