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**EMGT 5020**

**HW4**

**4.2, 4.18, 4.23, 4.26, 4.37**

4.2 Flying Penguins Corp. has total current assets of $11,845,175, current liabilities of $5,311,020, and a quick ratio of 0.89. How much inventory does it have?

Current assets – Inventory

Quick ratio = -----------------------------------

Current liabilities

-x = (0.89 \* 5,311,020) – 11,845,175

-x = - 7,118,370

**Quick ratio** = **7,118,370**

4.18 Nimitz Rental Company had depreciation expenses of $108,905, interest expenses of $78,112, and an EBIT of $1,254,338 for the last fiscal year. What are the times interest-earned and cash coverage ratios for this company?

EBIT

Times interest = ----------------------------

Interest expense

x = 1,254,338 / 78,112

**Times interest-earned = 16.06**

EBITDA

Cash coverage = -------------------------

Interest expense

x = (1,254,338 + 108,905) / 78,112

**Cash coverage = 17.45**

4.23 Xtreme Sports Innovations has disclosed the following information:

EBIT = $25,664,300 Net income = $13,054,000

Net sales = $83,125,336 Total debt = $20,885,753

Total assets = $71,244,863

Compute the following ratios for this firm using the DuPont identity: debt-to-equity ratio, EROA, ROA, and ROE.

Debt-to-equity ratio = Total debt / Total equity 20,885,753 / Total equity

EROA = EBIT / Total assets 22,664,300 / 71,244,863 = 0.3181

ROA = Net income / Total assets 13,054,000 / 71,244,863 = 0.1832

ROE = Net income / Total equity 13,054,000 / Total equity = ROE

Total debt = Total assets – Total equity

20,885,753 = 71,244,863 – x

Total equity = $50,359,110

Debt-to-equity ratio = 20,885,753 / 50,359,110 = 0.4147

ROE = 13,054,000 / Total equity

ROE = 13,054,000 / 50,359,110

ROE = 0.2592

Dupont identity:

ROE = profit margin \* asset turnover \* equity multiplier

ROE = (net income / net sales) \* (net sales / total assets) \* (total assets / total equity)

ROE = (13,054,000 / 83,125,336) \* (83,125,336 / 71,244,863) \* (71,244,863 / 50,359,110)

ROE = 0.2592

**Debt-to-equity ratio = 0.4147**

**EROA = 0.3181**

**ROA = 0.1832**

**ROE = 0.2592**

4.26 Carter, Inc., a manufacturer of electrical supplies, has an ROE of 23.1 percent, a profit margin of 4.9 percent, and a total asset turnover ratio of 2.6 times. Its peer group also has an ROE of 23.1 percent, but has outperformed Carter with a net profit margin of 5.3 percent and a total asset turnnover ratio of 3.0 times. Explain how Carter managed to achieve the same level of profitability as reflected by the ROE.

CARTER PEER GROUP

ROE 23.1 23.1

Profit margin 4.9 5.3

Asset turnover 2.6 3.0

ROE = profit margin \* asset turnover \* equity multiplier

ROE = (net income / net sales) \* (net sales / total assets) \* (total assets / total equity)

CARTER

23.1 = 4.9 \* 2.6 \* equity multiplier

PEER GROUP

23.1 = 5.3 \* 3.0 \* equity multiplier

Equity multiplier = total assets / total equity

Carter Inc. has a superior asset to equity ratio of x.xxxx whereas the peer group has an equity ratio of x.xxxx. Carter is able to

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4.37 Using the information from the financial statements, complete a comprehensive ratio analysis for Modern Appliances Corporation.

a. Calculate these liquidity ratios: current and quick ratios

Current ratio = Current assets / Current liabilities

Current ratio = 2,856,516,992 / 1,578,337,233

**Current ratio = 1.8098**

Quick ratio = (Current assets – Inventory) / Current liabilities

Quick ratio = (2,856,516,992 – 981,870,990) / 1,578,337,233

**Quick ratio = 1.1877**

b. Calculate these efficiency ratios: inventory turnover, accounts receivable turnover, DSO.

Inventory turnover = Cost of goods sold / Inventory

Inventory turnover = 3,432,925,255 / 981,870,990

**Inventory turnover = 3.4963**

Accounts receivable turnover = Net sales / Accounts receivable

Accounts receivable turnover = 5,398,412,000 / 1,046,612,233

**Accounts receivable turnover = 5.1580**

DSO = 365 / Accounts receivable turnover

DSO = 365 / 5.1580

**DSO = 70.7639**

c. Calculate these asset turnover ratios: total asset turnover, fixed asset turnover.

Total assets turnover = Net sales / Total assets

Total assets turnover = 5,398,412,000 / 4,394,643,738

**Total assets turnover = 1.2284**

Fixed assets turnover = Net sales / Net fixed assets

Fixed assets turnover = 5,398,412,000 / 754,660,275

**Fixed assets turnover =7.1534**

d. Calculate these leverage ratios: total debt ratio, debt-to-equity ratio, equity multiplier.

Total debt ratio = Total debt / Total assets

(total debt = total liabilities = total current liabilities + long-term debt)

Total debt ratio = (1,578,337,233 + 1,200,691,565) / 4,394,643,738

**Total debt ratio = 0.6324**

Debt-to-equity ratio = Total debt / Total equity

(total equity = common stock + retained earnings)

Debt-to-equity ratio = 2,779,028,798 / (397,407,352 + 1,218,207,588)

**Debt-to-equity ratio = 1.7201**

Equity multiplier = Total assets / Total equity

Equity multiplier = 4,394,643,738 / 1,615,614,940

**Equity multiplier = 2.7201**

e. Calculate these coverage ratios: times interest earned, cash coverage.

f. Calculate these profitablility ratios: gross profit margin, net profit margin, ROA, ROE.

g. Use the DuPont identity, after calculation the component ratios, to compute ROE.