Chapter 4—Profitability Analysis

MULTIPLE CHOICE

1. One important difference between return on assets (ROA) and return on common shareholder's equity (ROCE) is
   a. ROA does not differentiate based on how a company finances its assets; ROCE does.
   b. ROA does not distinguish between the different types of income items, such as income from continuing operations, discontinued operations, extraordinary items and changes in accounting principles; ROCE does.
   c. ROCE does not distinguish between the different types of income items, such as income from continuing operations, discontinued operations, extraordinary items and changes in accounting principles; ROA does.
   d. ROCE does not differentiate based on how a company finances its assets; ROA does.

   ANS: A PTS: 1

2. Asset turnover represents
   a. The ability of the firm to generate income from operations for a particular level of sales.
   b. The ability to generate sales from a particular investment in assets.
   c. The ability to manage the level of investment in assets for a particular level of assets.
   d. The number of days, on average, it takes management to turnover assets.

   ANS: B PTS: 1

3. Which factor does **not** explain differences or changes in ROA?
   a. Operating leverage
   b. Cyclicality of sales
   c. Product life cycle
   d. Financial leverage

   ANS: D PTS: 1

4. Which of the following industries would you expect to have, on average, high asset turnover and low profit margin?
   a. Hotels
   b. Grocery stores
   c. Utilities
   d. Oil and Gas extraction

   ANS: B PTS: 1

5. Firms with high levels of operating leverage experience which of the following in comparison to firms with low levels of operating leverage
   a. Higher levels of risk in operations.
   b. Lower expected rates of return.
   c. Lower variability in returns on assets.
   d. Higher sales.

   ANS: A PTS: 1

6. Return on assets can be disaggregated into three components. Which of the following is **not** one of the components?
   a. Assets Turnover ratio

b. Profit Margin ratio
c. Debt to Equity ratio
d. Capital Structure Leverage ratio

ANS: D PTS: 1

Orca Industries
Below are the two most recent balance sheets and most recent income statement for Orca Industries. The company has an effective tax rate of 35%.

Balance Sheet

	2011	**2010**
Assets:		
Cash	$10,000	$ 6,000
Accounts Receivable (net)	6,000	1,500
Inventory	8,000	10,000
Long-lived assets	12,000	11,000
Less: Accumulated depreciation	(4,000)	(2,000)
Total assets	$32,000	$26,500
Liabilities and Stockholders' Equity:		
Accounts payable	$ 5,000	$ 6,000
Deferred revenues	1,000	2,000
Long-term note payable	10,000	10,000
Less: Discount on note payable	(800)	(1,000)
Common stock	12,000	6,000
Retained earnings	4,800	3,500
Total liabilities and stockholders' equity	$32,000	$26,500

Income Statement

For the year ended December 31, 2011	
Revenues	$42,000
Cost of goods sold	(24,000)
Depreciation expense	(2,000)
Interest expense	(3,000)
Bad debt expense	(2,000)
Other expense (including income taxes)	(9,000)
Net income	$ 2,000

7. Refer to the information for **Orca Industries.** The return on assets for Orca Industries is
a. 6.8%
b. 13.5%
c. 10%
d. 12.3%

ANS: B
[2,000 + (1 - .35)3,000] / [(32,000 + 26,500)/2] = 13.5%

PTS: 1

8. Refer to the information for **Orca Industries.** The return on common shareholders' equity for Orca Industries is
a. 15.2%
b. 13.5%

c. 10%
d. 11.9%

ANS: A
2,000 / [(16,800 + 9,500)/2] = 15.2%

PTS: 1

9. Refer to the information for **Orca Industries**. The profit margin for computing ROA for Orca Industries is
a. 9.4%
b. 13.5%
c. 4.8%
d. 12.3%

ANS: A
[2,000 + (1 - .35) 3,000] / 42,000 = 9.4%

PTS: 1

10. Refer to the information for **Orca Industries**. Orca's asset turnover is
a. 1.31
b. 1
c. 1.58
d. 1.44

ANS: D
42,000 / [(32,000 + 26,500)/2] = 1.44

PTS: 1

11. Refer to the information for **Orca Industries**. Orca's accounts receivable turnover is (assume that Orca makes all sales on account)
a. 7.0
b. .53
c. 11.2
d. 10

ANS: C
42,000 / [(6,000 + 1,500) / 2] = 11.2

PTS: 1

12. Refer to the information for **Orca Industries**. Orca's basic earnings per share is
a. .22
b. .13
c. .25
d. .30

ANS: A
2,000/(12,000+6,000)/2=.22

PTS: 1

Net Devices Inc.
The following balance sheets and income statements are for Net Devices Inc., a manufacturer of small electronic devices, including calculators, personal digital assistants and mp3 players. For purposes of these questions assume that the company has an effective tax rate of 35%.

BALANCE SHEETS

ASSETS ($ in thousands)

Fiscal year end	**2011**	**2010**	**2009**
Cash	$ 875,650	$ 571,250	$ 154,230
Marketable securities	6,560	0	0
Receivables	771,580	775,250	902,000
Inventories	1,320,150	1,254,600	1,418,500
Other current assets	249,000	231,200	229,900
Total current assets	3,222,940	2,832,300	2,704,630
Property, plant & equipment	1,118,750	1,100,300	1,122,400
Intangibles	263,050	241,000	215,600
Deposits & other assets	184,500	168,250	168,900
Total assets	$4,789,240	$4,341,850	$4,211,530

LIABILITIES ($ in thousands)

Fiscal year end	**2011**	**2010**	**2009**
Accounts payable	$1,178,540	$1,061,100	$1,138,250
Current long term debt	18,100	316,500	150,900
Accrued expenses	664,100	615,900	585,400
Income taxes payable	138,900	108,400	38,200
Other current liabilities	0	0	0
Total current liabilities	1,999,640	2,101,900	1,912,750
Long term debt	478,250	378,400	599,630
Other long term liabilities	13,350	0	0
Total liabilities	2,491,240	2,480,300	2,512,380
Preferred stock	850,000	850,000	550,000
Common stock net	4,000	3,950	3,800
Additional Paid-in Capital	869,000	758,000	689,500
Retained earnings	1,430,500	1,055,000	1,245,050
Treasury stock	(855,500)	(805,400)	(789,200)
Shareholders' equity	2,298,000	1,861,550	1,699,150
Total Liab. & Equity	$4,789,240	$4,341,850	$4,211,530

INCOME STATEMENTS ($ in thousands)

Fiscal year end	**2011**	**2010**
Net sales	$11,455,500	$11,082,100
Cost of Goods Sold	(8,026,450)	(7,940,065)
Gross profit	3,429,050	3,142,035
Selling, general & admin. Exp.	(1,836,400)	(1,789,200)

Income before deprec. & amort.	1,592,650	1,352,835
Depreciation & amortization	(785,250)	(757,250)
Interest expense	(46,195)	(43,340)
Income before tax	761,205	552,245
Provision for income taxes	(157,725)	(112,290)
Minority interest	--	--
Net income	$ 603,480	$ 439,955
Outstanding shares (in thousands)	308,515	303,095
Preferred Dividends (in thousands)	$85,000	$85,000

13. Refer to the information for **Net Devices Inc.** What is the rate of return on assets for Net Devices for 2011?
    a. 11.64%
    b. 14.50%
    c. 12.60%
    d. 13.88%

    ANS: D
    [603,480 + (1-.35) × 46,195] / [(4,789,240 + 4,341,850)/2] = 13.88%

    PTS: 1

14. Refer to the information for **Net Devices Inc.** What is the profit margin for ROA for Net Devices for 2010?
    a. 7.26%
    b. 4.22%
    c. 5.00%
    d. 3.97%

    ANS: B
    [439,955 + (1-.35) × 43,340] / 11,082,100 = 4.22 %

    PTS: 1

15. Refer to the information for **Net Devices Inc.** What is the accounts receivable turnover ratio for Net Devices for 2011?
    a. 24.65
    b. 14.85
    c. 14.81
    d. 10.50

    ANS: C
    11,455,500 / [(771,580 + 775,250) / 2] = 14.81

    PTS: 1

16. Refer to the information for **Net Devices Inc.** What is the inventory turnover for Net Devices for 2011?
    a. 10.32
    b. 8.90

c. 2.51
d. 6.23

ANS: D
8,026,450 / [(1,320,150 + 1,254,600) / 2] = 6.23

PTS: 1

17. Refer to the information for **Net Devices Inc.** What is Net Devices' return on common shareholders' equity for 2011?
a. 26.54%
b. 30.89%
c. 35.81%
d. 42.16%

ANS: D
[603,480 - 85,000] / [(1,448,000 + 1,011,550)/2] = 42.16%

PTS: 1

18. Refer to the information for **Net Devices Inc.** What is Net Devices' capital structure leverage ratio for 2011?
a. 3.89
b. 1.68
c. 3.71
d. 10.32

ANS: C
[(4,789,240 + 4,341,850) / 2] / [(1,448,000 + 1,011,550) / 2] = 3.71

PTS: 1

19. Refer to the information for **Net Devices Inc.** What is Net Devices' earnings per share for 2011?
a. $1.00
b. $1.70
c. $1.96
d. $0

ANS: B
(603,480,000 - 85,000,000) / (308,515,000 + 303,095,000)/2 = $1.70

PTS: 1

20. Which of the following might an analyst **not** want to eliminate from past earnings when using past earnings to forecast future earnings?
a. nonrecurring gains from the sale of assets.
b. unusual asset impairment charges.
c. nonrecurring restructuring charges.
d. revenue from the sale of inventory.

ANS: D PTS: 1

21. Sustainable earnings represent
a. the level of earnings expected to persist in the future.
b. the level of earnings and the growth in the levels of earnings expected to persist in the

future.
c. the growth rate of future earnings.
d. retained earnings.

ANS: B PTS: 1

22. The statutory tax rate differs from a firm's average tax rate due to which of the following reasons
a. the statutory tax rate is a marginal tax rate.
b. some expenses are included in book income but do not enter into taxable income.
c. the average tax rate is for a period of three years.
d. the statutory tax rate does not effect GAAP measures of revenues and expenses.

ANS: B PTS: 1

23. The profit margin for ROA indicates the ability of a firm to generate earnings for a particular level of
a. sales
b. assets
c. working capital
d. shareholders' equity

ANS: A PTS: 1

24. Which of the following would be considered a committed fixed cost (a cost that is incurred regardless of the level of activity during the period)?
a. depreciation expense
b. bad debt expense
c. advertising expense
d. cost of goods sold

ANS: C PTS: 1

25. Hall and Porter argue that firms have two generic alternative strategies for any particular product. These strategies are
a. low risk focus, low risk focus
b. retail customer focus, wholesale customer focus
c. product differentiation, low-cost leadership
d. low operating leverage, high operating leverage

ANS: C PTS: 1

26. Which of the following is **not** a way a company can achieve a low-cost position
a. economies of scale
b. production efficiency
c. customer service
d. outsourcing

ANS: C PTS: 1

27. Which of the following scenarios is consistent with an increasing cost of goods sold to sales percentage and increasing inventory turnover?
a. Firm raises prices to increase its gross margin but inventory sells more slowly.
b. Weak economic conditions lead to reduced demand for a firm's products, necessitating price reductions to move goods.
c. Strong economic conditions lead to increased demand for a firm's products, allowing price increases.
d. Firm shifts its product mix toward lower margin, faster moving products.

ANS: D PTS: 1

Extreme Sports Company and All Sports Corporation
Below is financial information for two sporting goods retailers. Extreme Sports Company operates a retail business and franchising business. At the end 2011, Extreme Sports had 263 Company-owned and 120 franchise-operated retail stores. Extreme's stores are located in suburban, strip mall and regional mall locations, the company operates in 32 states. All Sports Corporation sells sporting goods and related products at over 2,500 Company-operated retail stores.

Selected Data for All Sports and Extreme Sports
(amounts in millions)

	All Sports	**Extreme Sports**
Sales	$5,320	$1,344
Cost of Goods Sold	3,897	887
Interest Expense	138	43
Net Income	212	33
Average Inventory	998	286
Average Fixed Assets	1,163	130
Average Total Assets	2,472	662
Average Tax Rate	40%	40%

28. Refer to the information for **Extreme Sports Company and All Sports Corporation.** Compute the Asset Turnover for All Sports
a. 3.2%
b. 2.15
c. 8.9%
d. 1.1%

ANS: B
[$5320/2472=2.15
PTS: 1

29. Refer to the information for **Extreme Sports Company and All Sports Corporation.** What is the return on assets for All Sports?
a. 11.9%
b. 10.8%
c. 9.2%
d. 8.6%

ANS: A
[212 + (1-.4) □ 138] / 2,472 = 11.9%

PTS: 1

30. Refer to the information for **Extreme Sports Company and All Sports Corporation.** Calculate All Sports' inventory turnover ratio
a. 5.3
b. 1.2
c. 3.9
d. .256

ANS: C
3,897/998=3.9

PTS: 1

31. Multiples of EPS to value firms are referred to as.
    a. ROA
    b. price-earnings ratios
    c. ROCE
    d. Weighted average number of common shares outstanding

    ANS: B PTS: 1

32. Adjustments for dilutive securities and the adjustment to weighted average number of shares outstanding presumes that the dilutive securities are converted to common shares

    a. as of the beginning of the year.
    b. as of the end of the year.
    c. as of the middle of the year.
    d. as of the point in time where the maximum number of shares are outstanding.

    ANS: A PTS: 1

33. To calculate diluted EPS, the accountant does all of the following **except**:
    a. adds back to net income any compensation expense recognized on the employee stock options
    b. adds back any interest expense (net of taxes) on convertible bonds
    c. adds back any dividends on convertible preferred stock the firm subtracted in computing net income to common shareholders.
    d. enters only the net incremental shares issued (shares issued under options minus assumed shares repurchased) in the computation of diluted EPS.

    ANS: A PTS: 1

34. Which of the following is the primary objective in most financial statement analysis?
    a. to value a firm's equity securities.
    b. to look for unrecorded liabilities.
    c. to establish a firm's strategy within the industry.
    d. to define markets for the firm.

    ANS: A PTS: 1

35. Time-series analysis helps answer all of the following questions **except**:
    a. Is the firm becoming more or less profitable over time?
    b. Is the firm becoming more or less risky?
    c. How is management of the firm responding to external economic forces?
    d. What is the amount of assets or capital required to generate a particular level of earnings?

    ANS: D PTS: 1

36. Critics of EPS as a measure of profitability point out that it does **not** consider:
    a. simple capital structures.
    b. the amount of assets or capital required to generate a particular level of earnings.
    c. the deduction of preferred stock dividends from net income.
    d. Adjustments for dilutive securities and the adjustment to weighted average number of shares outstanding for complex capital structures.

    ANS: B PTS: 1

Ramos Company
Ramos Company included the following information in its annual report:

	2011	2010	2009
Sales	$178,400	$162,500	$155,500
Cost of goods sold	115,000	102,500	100,000
Operating expenses	50,000	50,000	45,000
Net income	13,400	10,000	10,500

37. Refer to the information for **Ramos Company.** In a common size income statement for 2011, the operating expenses are expressed as:
a. 30.3%
b. 28.0%
c. 43.8%
d. 100%

ANS: B
$50,000 / $178,400 = 28%

PTS: 1

38. Refer to the information for **Ramos Company.** In a common size income statement for 2009, the cost of goods sold are expressed as:
a. 64.3%
b. 40.0%
c. 87 %
d. 103%

ANS: A
$100,000 / $155,500 = 64.3%

PTS: 1

39. Refer to the information for **Ramos Company.** In a common size income statement for 2011, the cost of goods sold are expressed as:
a. 130%
b. 115%
c. 64.5%
d. 63.1%

ANS: C
$115,000 / $178,400 = 64.5%

PTS: 1

40. Refer to the information for **Ramos Company.** In a percentage change income statement over the period of 2009 to 2011, what is the change in sales?
a. 100%
b. 87.2%
c. 12.8%
d. 14.7%

ANS: D
($178,400 - $155,500)/ $155,500 = 14.7%

PTS: 1

41. Refer to the information for **Ramos Company.** In a percentage change income statement over the period of 2009 to 2011, what is the change in net income?
    a. 100%
    b. 21.6%
    c. 72.4%
    d. 27.6%

    ANS: D
    ($13,400 - 10,500) / $10,500 = 27.6%

    PTS: 1

42. Which of the following are better indicated by percentage change statements than common-size statements?
    a. monetary changes
    b. profitability
    c. stability
    d. growth and decline

    ANS: D PTS: 1

43. Common-size analysis requires the analyst to be aware that percentages can change because of all of the following **except**:
    a. changes in expenses in the numerator independent of changes in sales
    b. changes in sales independent of changes in expenses
    c. interaction effects between the numerator and denominator
    d. All of these are possible explanations.

    ANS: D PTS: 1

44. Firms with complex capital structures can use which of the following in calculating EPS
    a. outstanding convertible bonds.
    b. stock options exercised
    c. stock warrants issued
    d. all of the above

    ANS: D PTS: 1

45. The computation of the additional shares to be issued on the exercise of stock options assumes that the firm would repurchase common shares on the open market using an amount equal to the sum of all the following **except**:
    a. any cash proceeds from such exercise
    b. net incremental shares issued
    c. any unamortized compensation expense on those options
    d. any tax benefits that would be credited to additional paid-in capital

    ANS: B PTS: 1

46. Another term for earnings power is
    a. nonrecurrent revenue.
    b. nonrecurrent gains.
    c. sustainable earnings.
    d. net change in equity.

    ANS: C PTS: 1

47. The three elements of risk that help in understanding differences across firms and changes over time in ROAs are:
    a. product life cycles, cyclicality of sales, competitive constraint.
    b. operating leverage, cyclicality of sales, product life cycles.
    c. cyclicality of sales, competitive constraint, operating leverage.
    d. operating leverage, competitive constraint, product life cycles.

    ANS: B PTS: 1

Carl Industries

Carl Industries has condensed balance sheets as shown:

	2011	2010	2009
Assets:			
Current assets	65,000	$46,500	$80,000
Plant & equipment, net	600,000	420,000	410,000
Intangible assets, net	15,000	36,500	50,000
Total assets	680,000	$503,000	540,000
Liabilities & Stockholders' Equity:			
Current liabilities	$70,000	$25,000	$33,500
Long-term liabilities	420,000	290,000	400,000
Stockholders' equity	190,000	188,000	106,500
Total liabilities & equity	$680,000	$503,000	540,000

48. Refer to the information for **Carl Industries.** In a common size balance sheet for 2010, plant and equipment (net) is expressed as
    a. 74.5%
    b. 93.2%
    c. 83.5 %
    d. 30.5%

    ANS: C
    $420,000/503,000 83.50%
    PTS: 1

49. Refer to the information for **Carl Industries.** In a common size balance sheet for 2009, total liabilities and equity are expressed as
    a. 25.9%
    b. 100%
    c. 74.1%
    d. 103.6%

    ANS: B PTS: 1

50. Refer to the information for **Carl Industries.** In a percentage change balance sheet over the period of 2009 to 2011, what is the change in long-term liabilities?
    a. 94.7%
    b. 15.4%
    c. 5.3%
    d. 5%

    ANS: D
    ($ ($420,000-400000)/$400,000=5%

PTS: 1

51. Refer to the information for **Carl Industries.** In a percentage change balance sheet over the period of 2009 to 2011, what is the change in current assets?
    a. 78.6%
    b. (27.3%)
    c. (21.4%)
    d. (18.75%)

    ANS: D
($65,000-80,000)/80,000=(18.75%)
    PTS: 1

COMPLETION

1. In order to measure how profitable a firm is in generating a return for its common shareholders, a financial analyst would examine the return on _____.

   ANS: common shareholders' equity

   PTS: 1

2. When the financial analysts multiplies the profit margin for ROA with the assets turnover ratio the result is called_____
   ANS: return on assets

   PTS: 1

3. The _____ effect of interest expense on net income equals one minus the marginal tax rate times the interest expense.

   ANS: incremental

   PTS: 1

4. Return on common equity can be disaggregated into profit margin for ROCE, capital structure leverage and _____.

   ANS: asset turnover

   PTS: 1

5. Return on assets can be disaggregated into asset turnover and _____.

   ANS: profit margin for return on assets

   PTS: 1

6. Return on assets will likely differ across firms and across time. Three elements of risk that will help explain these differences are _____, cyclicality of sales and stage and length of product life cycle.

   ANS: operating leverage

   PTS: 1

7. Return on assets will likely differ across firms and across time. Three elements of risk that will help explain these differences are operating leverage, _____, and stage and length of product life cycle.

   ANS: cyclicality of sales

   PTS: 1

8. Firms with high operating leverage have a higher proportion of _____ in their cost structure.

   ANS: fixed costs

   PTS: 1

9. Firms with _____ levels of operating leverage experience greater variability in their return on assets.

   ANS: high

   PTS: 1

10. The ability of a firm to generate income from operations given a particular level of sales is measured by the _____.

    ANS: profit margin

    PTS: 1

11. The ability of a firm to manage the level of investment in assets for a particular level of sales is measured by the _____.

    ANS: asset turnover

    PTS: 1

12. Accounts receivable turnover is calculated by dividing _____ by average net accounts receivable.

    ANS: net sales on account

    PTS: 1

13. Inventory turnover is calculated by dividing _____ by average inventories.

ANS: cost of goods sold

PTS: 1

14. Return on assets can be a misleading ratio when analyzing technology firms because two important assets, _____ and _____ do **not** appear on their balance sheets

ANS: their employees; their technologies

PTS: 1

15. When calculating Basic earnings per share net income is adjusted by_____
ANS: preferred dividends

PTS: 1

16. When calculating the return on fixed assets sales is divided by _____

ANS: Average fixed assets
PTS: 1

17. One problem with using EPS as a measure of profitability is that it does **not** consider the amount of _____ or _____ required to generate a particular level of earnings.

ANS: assets, capital

PTS: 1

18. When an analyst uses measures of past profitability to forecast the firm's future profitability the expectation is that those revenues, gains, expenses and losses will _____.

ANS: persist

PTS: 1

19. _____ is the level of earnings and the growth in the levels of earnings expected to persist in the future.

ANS: Sustainable earnings

PTS: 1

20. The _____ of interest expense on net income equals one minus the marginal tax rate times interest expense.

ANS: incremental effect

PTS: 1

21. The rationale for adding back the _____ relates to attaining consistency in the numerator and denominator of ROA.

ANS: minority interest in earnings

PTS: 1

22. Economic theory suggests that higher levels of _____ in any activity should lead to higher levels of _____.

ANS: risk, expected return

PTS: 1

23. All else being equal, firms with high levels of _____ incur more risk in their operations and should earn higher rates of return.

ANS: operating leverage

PTS: 1

24. To reduce the risk inherent in _____ a company should strive for a high proportion of variable costs in its cost structure.

ANS: cyclical sales

PTS: 1

25. Firms that have either convertible securities or stock options or warrants outstanding have _____.

ANS: complex capital structures

PTS: 1

26. EPS is an ambiguous measure of profitability because it reflects operating performance in the numerator and _____ in the denominator.

ANS: capital structure

PTS: 1

27. Operating income is negative in an amount equal to _____ when revenues are zero.

ANS: fixed costs

PTS: 1

28. Firms and industries characterized by heavy fixed capacity costs and lengthy periods required to add new capacity operate under a _____.

ANS: capacity constraint

PTS: 1

SHORT ANSWER

1. Below is financial information for two restaurant retailers. Popper's Company operates an innovative retail bakery-cafe business and franchising business. At the end 2010, Popper's had 132 company-owned and 346 franchise-operated bakery-cafes. Popper's located most of their unique bakery-cafe concept stores in suburban, strip mall, and regional mall locations. As a first mover in this concept, the company operates in 32 states. Simmer Corporation began operations five years earlier than Popper's and purchases and roasts whole bean coffees and sells them, along with numerous coffee drinks and related products at over 2,900 Company-operated retail stores.

   Selected Data for Popper's Company and Simmer Corporation
   (amounts in millions)

		Simmer	**Popper's**
Net Sales		$4,076	$278
Sales	Simmer $5,000 Popper's 300		
Cost of Goods Sold		1,686	97
Interest Expense		0	0
Net Income		268	22
Average Inventory		303	4
Average Fixed Assets		2,163	130

   Required:

   a. Compute the Inventory turnover, fixed asset turnover, and accounts receivable turnover.
   b. Describe the likely reasons for the difference in the accounts receivable turnover and the inventory turnover

   ANS:

a.	**Simmer**	**Popper's**
Inventory turnover	$$1686/$303=5.56	$97/$22=4.41
Fixed assets turnover	$5,000/$2,163= 2.31 =	$300/130=2.31=
Accounts receivable turnover	$4,076/$2,598=1.57	$278/120 = 2.32 1

   The differences between the two companies accounts receivable turnover can be explained by looking at the individual company's credit policies and the general economic conditions. As the economy weakens companies may take longer to pay off their accounts receivable. Companies that have looser credit policies are assuming more default risk than their counterparts with stricter credit policies. Simmer may be having some collection issues and need to re-evaluate their credit policies. Popper's has the lower inventory turnover ratio and this could be accounted for because Popper's sells higher priced bakery goods and as a result has less sales. Additionally bakery goods have a shorter life span than does coffee beans and drinks made to order.

   PTS: 1

2. Sensitron and Douglas Tools manufacture and market power tools and accessories. Sensitron targets customers in the professional contractor market, while Douglas Tools focuses on home users and professionals. Selected financial data for the companies appears below.

Sensitron	**2010**	**2009**	**2008**
Sales	$2,109,100	$2,095,700	$2,175,700

Average Accounts Receivable	564,500	608,650	631,072
Change in Sales from previous year	0.64%	-3.68%	11.83%

Douglas Tools	**2010**	**2009**	**2008**
Sales	$4,394,000	$4,245,600	$4,474,900
Average Accounts Receivable	718,800	745,850	803,150
Change in Sales from previous year	3.50%	-5.12%	0.59%

Required:
1. Calculate the accounts receivable turnover ratio for each firm for year 2010, 2009, 2008.
2. Suggest reasons for the differences in the accounts receivable turnover ratios for these two firms.

ANS:
1.

	2010	**2009**	**2008**
A/R Turnover--Sensitron	$2,109,100 / 564,500 =3.74	$2,095,700 / 608, 650 =3.44	$2,175,700 / 631,072 =3.45
A/R Turnover--Douglas Tools	$4,394,000 / 718,800 =6.11	$4,245,600 / 745,850 =5.69	$4,474,900 / 803,150 =5.57

2.
The main reason for the difference is that Sensitron are sold at more specialty retail stores. Sensitron probably allows these customers to have more lenient credit terms.

PTS: 1

3. Sensitron and Douglas Tools manufacture and market power tools and accessories. Sensitron targets customers in the professional contractor market, while Douglas Tools focuses on home users and professionals. Both firms use the same cost flow assumption for valuing inventories and cost of goods sold. Selected financial data for the companies appears below.

Sensitron	**2010**	**2009**	**2008**
Cost of Goods Sold	$1,144,200	$1,134,100	$1,169,400
Average Inventory	372,550	397,050	436,870
Change in Sales from previous year	0.64%	-3.68%	11.83%

Douglas Tools	**2010**	**2009**	**2008**
Cost of Goods Sold	$2,876,100	$2,846,600	$2,889,000
Average Inventory	730,550	778,100	797,500
Change in Sales from previous year	3.50%	-5.12%	0.59%

Required:
1. Calculate the inventory turnover ratio for each firm for year 2010, 2009, 2008.
2. Suggest reasons for the differences in the Inventory turnover ratios for these two firms.

ANS:
1.

	2010	**2009**	**2008**
Inventory Turnover--Sensitron	$1,144,200 / 372,550 =3.07	$1,134,100 / 397,050 =2.86	$1,169,400 / 436, 870 =2.68
Inventory			

Turnover-- Douglas Tools	$2,876,100 / 730,550 =3.94	$2,846,600 / 778,100 =3.66	$2,889,000 / 797,500 =3.62

2.
The main reason for the difference is that Sensitron sells more of a specialty product.

PTS: 1

4. Linda's Clothing is a retailer of contemporary women's clothing. Selected financial information for Linda's appears below:

	2011	**2010**	**2009**	**2008**
Net Income	$ 56,759	$ 31,150	$ 15,375	$14,750
Total Assets at year-end	$381,500	$246,250	$145,490	$71,268
Weighted Average number of shares Outstanding	84,215	80,546	77,965	75,888
Total Liabilities at year-end	205,967	119,657	60,522	17,623
Common Stockholders' Equity at year-end	$175,533	$126,593	$ 84,968	$53,645
Interest Expense	165	195	258	368

Required:
a. Compute the rate of return on assets for the years 2009-2011. Linda's has an effective tax rate of 35%.
b. Compute the rate of return on common shareholders' equity for the years 2009-2011.
c. Compute basic earnings per share for the years 2009-2011.
d. Interpret the changes in ROA versus ROCE and EPS over the three-year period.

ANS:

		2011	**2010**	**2009**
a.	ROA	18.12%	15.97%	14.34%
b.	ROCE	37.57%	29.45%	22.18%
c.	EPS	$0.67	$0.39	$0.20

d. As Linda's Clothing begins to finance more of its assets with liabilities the gap between ROA and ROCE increases. The company is extremely profitable and all ratios are increasing. As the company has become more profitable it has been able to fund operations and expansion with internally generated funds as opposed to issuing large amounts of additional equity (relative to the increase in assets). This allows the company to increase EPS.

PTS: 1

5. Explain the difference between a simple and complex capital structure as the terms are used in the calculation of EPS.

ANS:

A simple capital structure consists only of common stock and includes no potentially dilutive securities such as stock warrants, convertible bonds, etc that can dilute earnings per share. A complex capital structure includes convertible bonds, stock rights, stock warrants, and stock options that when exercised can potentially lower (dilute) the company's earnings per share.
PTS: 1

6. Discuss the economic characteristics of firms that have the following mix of profit margin and asset turnover. In addition provide an example of an industry that would have the relevant profit margin asset turnover mix:
   A. High profit margin and low asset turnover.
   B. Low profit margin and high asset turnover

   ANS:
   1. Firms and industries characterized by heavy fixed capacity costs and lengthy periods required to add new capacity operate under a capacity constraint. There is an upper limit on the size of assets turnover achievable. In order to attract sufficient capital, these firms must generate a relatively high profit margin. Some of the industries in this space are oil and gas extraction, hotels, and utilities.
   2. Firms whose products are commodity-like in nature, where there are few entry barriers, and where competition is intense, operate under a competitive constraint. There is an upper limit on the level of profit margin for ROA achievable. In order to attract sufficient capital, these firms must strive for high assets turnovers. Some of the industries in this space are retailers and wholesalers.

   PTS: 1

7. Below is financial information for two sporting goods retailers. Extreme Sports Company operates a retail business and franchising business. At the end 2011, Extreme Sports had 263 Company-owned and 120 franchise-operated retail stores. Extreme's stores are located in suburban, strip mall and regional mall locations, the company operates in 32 states. All Sports Corporation sells sporting goods and related products at over 2,500 Company-operated retail stores.

   Selected Data for All Sports and Extreme Sports
   (amounts in millions)

	All Sports	**Extreme Sports**
Sales	$5,320	$1,344
Cost of Goods Sold	3,897	887
Interest Expense	138	43
Net Income	212	33
Average Accounts Receivable	114	18
Average Inventory	998	286
Average Fixed Assets	1,163	130
Average Total Assets	2,472	662
Average Tax Rate	40%	40%

   Calculate the following ratios for All Sports and Extreme Sports:

   a. Return on assets
   b. Profit margin for ROA
   c. Assets turnover
   d. Accounts receivable turnover
   e. Inventory turnover
   f. Fixed asset turnover

   ANS:

		All Sports	**Extreme Sports**
a.	Return on assets	0.119	0.089
b.	Profit Margin for ROA	0.055	0.044
c.	Assets turnover	2.15	2.03

d.	Accounts Receivable turnover	46.67	74.67
e.	Inventory turnover	3.90	3.10
f.	Fixed Asset turnover	4.57	10.34

PTS: 1

PROBLEM

1. Grundig Technologies is a manufacturer. Below are the company's two most recent balance sheets and its most recent income statement. Use this information to answer the following questions:

   a. Calculate the rate of return on assets (ROA) for 2011. Disaggregate ROA into the profit margin for ROA and total assets turnover components.
   b. Calculate the rate of return on common stockholders' equity (ROCE) for 2011. Disaggregate ROCE into the profit margin for ROCE, total assets turnover and capital structure leverage components.
   c. Did financial leverage work to the advantage of the common shareholders during 2011? Explain.

Grundig Technologies
Balance Sheet
As of December 31

ASSETS	**2011**	**2010**
Cash	$ 69,000	$ 22,000
Accounts Receivable	82,000	66,000
Supplies	15,000	19,000
Inventories	180,000	189,000
Land	75,000	110,000
Equipment	260,000	200,000
Accumulated Deprec.-EQ.	(69,000)	(42,000)
TOTAL ASSETS	$612,000	$564,000
LIABILITIES		
Accounts Payable	$ 34,000	$ 47,000
Unearned Rent	15,000	19,000
Bonds Payable	150,000	200,000
Stockholders' Equity		
Common Stock($1 Par Value)	214,000	164,000
Retained Earnings	199,000	134,000
TOTAL LIABILITIES AND EQUITY	$612,000	$564,000

Grundig Technologies
Income Statement
For the year ended December 31, 2011

Sales	$560,000
Cost of Goods Sold	($320,000)
Gross Profit	$240,000
General and Administrative Expense	($38,000)
Selling Expense	($27,000)

Interest Expense	($17,000)
Income before Income taxes	$158,000
Income Tax Expense (35%)	($55,300)
Net Income	$102,700

ANS:

a. ROA = 19.3%, Profit Margin = 20.3%, Assets Turnover = .95

b. ROCE =28.9%, Profit margin = 18.3%, Assets Turnover = .95, Capital Structure Leverage = 1.65

c. Financial leverage worked to the advantage of common stockholders because ROCE exceeded ROA.

PTS: 1

2. Use the following information about Sanibel Corporation to calculate the following ratios for 2011 (assume an effective tax rate of 35%):

a. Return on Assets
b. Profit margin for ROA
c. Assets Turnover
d. Return on Common Shareholders' Equity
e. Profit Margin for ROCE
f. Accounts Receivable Turnover
g. Inventory Turnover
h. Fixed Asset Turnover

Sanibel Corporation
Balance Sheet

As of December 31,	**2011**	**2010**
Assets:		
Cash and cash equivalents	$ 712,300	$ 425,000
Accounts Receivable	408,000	106,250
Inventory	510,000	612,000
Current Assets	1,630,300	1,143,250
Equipment	714,000	654,500
Less: Accumulated depreciation	(238,000)	(119,000)
Land	425,000	170,000
Total assets	**$2,531,300**	**$1,848,750**
Liabilities		
Accounts Payable	$ 297,500	$ 382,500
Accrued Salaries Payable	93,500	136,000
Rent Expense Payable	37,400	17,000
Income Tax Payable	117,300	68,000
Current Liabilities	545,700	603,500
Long-term note payable	850,000	510,000
Total Liabilities	1,395,700	1,113,500

Stockholders' Equity:		
Common stock	714,000	510,000
Retained earnings	421,600	225,250
Total liabilities and stockholders' equity	**$2,531,300**	**$1,848,750**

Sanibel Corporation
Income Statement
For the year ended December 31, 2011

Revenues	$2,499,000	
Cost of goods sold	(1,428,000)	
Gross Profit		1,071,000
Operating Expenses		
Depreciation expense	(112,000)	
Salary expense	(233,600)	
Insurance Expense	(40,000)	
Rent Expense	(160,000)	
Interest Expense	(67,200)	
Total Operating Expenses		(612,800)
Income from Operations		458,200
Income Tax Expense		(160,370)
Net income		$ 297,830

ANS:

a. Return on Assets--297,830 + 67,200 (1-.35) / $2,190,025 = 15.6%

b. Profit margin for ROA--$341,510 / $2,499,000 = 13.7%

c. Assets Turnover--$2,499,000 / $2,190,025 = 1.14

d. Return on Common Shareholders' Equity--$297, 830 / ($1,870,850/2) = 31.8%

e. Profit Margin for ROCE--$297,830 / $2,499,000 = 11.9%

f. Accounts Receivable Turnover--$2,499,000 / ((408,000+106,250)/2) = 9.72

g. Inventory Turnover--$1,428,000 / ((510,000+612,000)/2) = 2.55

h. Fixed Asset Turnover--$2,499,000 / ($1,606,500/2) = 3.11

PTS: 1

3. The following balance sheets and income statements are for Net Devices Inc., a manufacturer of small electronic devices, including calculators, personal digital assistants and mp3 players. Use the information to calculate the following information:

   a. Compute the rate of return on assets for Net Devices for both 2011 and 2010. Disaggregate the rate of return on assets into the profit margin on ROA and asset turnover components.

The income tax rate is 35%.

b. Calculate the accounts receivable turnover ratio for Net Devices for 2011 and 2010. All of the company's sales were made on account.
c. Calculate the inventory turnover ratio for Net Devices for 2011 and 2010.
d. Calculate the fixed assets turnover ratio for Net Devices for 2011 and 2010.
e. Calculate the rate of return on common shareholders' equity for Net Devices for 2011 and 2010. The amount of preferred dividends paid each year appear after the income statement. Calculate profit margin for ROCE.
f. Determine Net Devices capital structure leverage for 2011 and 2010.
g. Calculate Net Devices earnings per share for 2011 and 2010.

ASSETS (in thousands)

Fiscal year end	**2011**	**2010**	**2009**
Cash	$ 875,650	$ 571,250	$ 154,230
Marketable securities	6,560	0	0
Receivables	771,580	775,250	902,000
Inventories	1,320,150	1,254,600	1,418,500
Other current assets	249,000	231,200	229,900
Total current assets	3,222,940	2,832,300	2,704,630
Property, plant & equipment	1,118,750	1,100,300	1,122,400
Intangibles	263,050	241,000	215,600
Deposits & other assets	184,500	168,250	168,900
Total assets	$4,789,240	$4,341,850	$4,211,530

LIABILITIES (in thousands)

Fiscal year end	**2011**	**2010**	**2009**
Accounts payable	$1,178,540	$1,061,100	$1,138,250
Current long term debt	18,100	316,500	150,900
Accrued expenses	664,100	615,900	585,400
Income taxes payable	138,900	108,400	38,200
Other current liabilities	0	0	0
Total current liabilities	1,999,640	2,101,900	1,912,750
Long term debt	478,250	378,400	599,630
Other long term liabilities	13,350	0	0
Total liabilities	2,491,240	2,480,300	2,512,380
Preferred stock	850,000	850,000	550,000
Common stock net	4,000	3,950	3,800
Additional Paid-in Capital	869,000	758,000	689,500
Retained earnings	1,430,500	1,055,000	1,245,050
Treasury stock	(855,500)	(805,400)	(789,200)
Shareholders' equity	2,298,000	1,861,550	1,699,150
Total Liab. & Equity	$4,789,240	$4,341,850	$4,211,530

INCOME STATEMENT (in thousands)

Fiscal year end	**2011**	**2010**
Net sales	$11,455,500	$11,082,100

Cost of Goods Sold	(8,026,450)	(7,940,065)
Gross profit	3,429,050	3,142,035
Selling, general & admin. Exp.	(1,836,400)	(1,789,200)
Income before deprec. & amort.	1,592,650	1,352,835
Depreciation & amortization	(785,250)	(757,250)
Interest expense	(46,195)	(43,340)
Income before tax	761,205	552,245
Provision for income taxes	(157,725)	(112,290)
Minority interest	--	--
Net income	$ 603,480	$ 439,955
ADDITIONAL INFORMATION		
Outstanding shares	308,515,000	303,095,000
Preferred Dividends--Total	$85,000,000	$85,000,000
ANS:		
Return on Assets	13.88%	10.95%
Profit Margin for ROA	5.53%	4.22%
Assets Turnover	2.51	2.59
Accounts Receivable Turnover	14.81	13.21
Inventory Turnover	6.23	5.94
Fixed Assets Turnover	10.32	9.97
ROCE	42.16%	32.86%
Profit Margin on ROCE	4.53%	3.20%
Capital Structure Leverage	3.71	3.96
Earnings per share	$1.68	$1.17

a. Return on Assets:
2011: [603,480 + (1-.35) 46,195] / [(4,789,240 + 4,341,850)/2] = 13.88%
2010: [439,955 + (1-.35) 43,340] / [(4,341,850 + 4,211,530)/2] = 10.95%

Profit Margin on ROA:
2011: [603,480 + (1-.35) 46,195] / 11,455,500 = 5.53%
2010: [439,955 / (1-.35) 43,340] / 11,082,100 = 4.22 %

Assets Turnover:
2011: 11,455,500 / [(4,789,240 + 4,341,850)/2] = 2.51
2010: 11,082,100 / [(4,341,850 + 4,211,530)/2] = 2.59

b. Accounts Receivable Turnover:
2011: 11,455,500 / [(771,580 + 775,250) / 2] = 14.81
2010: 11,082,100 / [(775,250 + 902,000) / 2] = 13.21

c. Inventory Turnover:
2011: 8,026,450 / [(1,320,150 + 1,254,600) / 2] = 6.23
2010: 7,940,065 / [(1,254,600 + 1,418,500) / 2] = 5.94

d. Fixed Assets Turnover:
2011: 11,455,500 / [(1,118,750 + 1,100,300) / 2] = 10.32
2010: 11,082,100 / [(1,100,300+ 1,122,400) / 2] = 9.97

e. ROCE:
2011: [603,480 - 85,000] / [(1,448,000 + 1,011,550)/2] = 42.16%
2010: [439,955 - 85,000] / [(1,011,550 + 1,149,150)/2] = 32.86%

Profit Margin on ROCE:
2011: [603,480 - 85,000] / 11,455,500 = 4.53%
2010: [439,955 - 85,000] / 11,082,100 = 3.20%

f. Capital Structure Leverage:
2011: [(4,789,240 + 4,341,850)/2] / [(1,448,000 + 1,011,550)/2] = 3.71
2010: [(4,341,850 + 4,211,530)/2] / [(1,011,550 + 1,149,150)/2] = 3.96

g. Earnings per Share:
2011: 603,480,000 - 85,000,000 / 308,515,000 = $ 1.68
2010: 439,955,000 - 85,000,000 / 303,095,000 = $1.17

PTS: 1

4. Discuss how the following three elements of risk help us understand return on assets differs across firms and changes over time:
   1. Operating leverage
   2. Cyclicality of sales
   3. Product life cycle

   ANS:
   1. Firms with high levels of operating leverage experience greater variability in their ROAs than firms with low levels of operating leverage. All else being equal (see the discussion of cyclicality of sales in the next section), firms with high levels of operating leverage incur more risk in their operations and should earn higher rates of return.
   2. The cyclicality of sales represents how the sales of certain goods and services are sensitive to conditions in the economy. Companies with cyclical products do well when the economy is in an upswing because customers purchase relatively high-priced items and sales of these firms grow accordingly. When the economy enters a recession, customers curtail their purchases and the sales of these firms decrease significantly. Firms with cyclical sales patterns incur more risk than firms with noncyclical sales.
   3. As products move through their life cycles, their ROAs should move from being negative during the introduction period and become positive during the growth period. ROA should reach a peak during the maturity stage, and then decline in the decline phase. This movement in ROA appears negatively correlated with the level of risk. Risks are probably highest in the introduction and growth stages, when ROA is low or negative, and least in the maturity phase, when ROA is high.

   PTS: 1

5. Examine the four following conditions involving inventory turnover. Discuss what economic factors might be leading to the condition and whether it suggests positive or negative future economic conditions.

Condition A: Increasing cost of goods sold to sales percentage, coupled with an increasing inventory turnover.	**Condition B: Decreasing cost of goods sold to sales percentage, coupled with a decreasing inventory turnover.**
Condition C: Increasing cost of goods sold to sales percentage, coupled with a decreasing inventory turnover.	**Condition D: Decreasing cost of goods sold to sales percentage, coupled with an increasing inventory turnover.**

ANS:
Condition A: Increasing cost of goods sold to sales percentage, coupled with an increasing inventory turnover. Firm lowers prices to sell inventory more quickly. Firm shifts its product mix toward lower margin, faster moving products. Firm outsources the production of a higher proportion of its products, requiring the firm to share profit margin with the outsourcer but reducing the amount of raw materials and work-in-process inventories.

Condition B: Decreasing cost of goods sold to sales percentage, coupled with a decreasing inventory turnover. Firm raises prices to increase its gross margin but inventory sells more slowly. Firm shifts its product mix toward higher margin, slower moving products. Firm produces a higher proportion of its products instead of outsourcing, thereby capturing more of the gross margin but requiring the firm to carry raw materials and work-in-process inventories.

Condition C: Increasing cost of goods sold to sales percentage, coupled with a decreasing inventory turnover. Weak economic conditions lead to reduced demand for a firm's products, necessitating price reductions to move goods. Despite price reductions, inventory builds up.

Condition D: Decreasing cost of goods sold to sales percentage, coupled with an increasing inventory turnover. Strong economic conditions lead to increased demand for a firm's products, allowing price increases. An inability to replace inventory as fast as the firm sells it leads to an increased inventory turnover. Firm implements a just-in-time inventory system, reducing storage costs, product obsolescence, and the amount of inventory held.

PTS: 1

6. Carridine Company reported net income of $1,903 on revenues of $55,618 for Year 4. Interest expense totaled $459, and preferred dividends totaled $13.5. Average total assets for Year 4 were $17,500. The income tax rate is 40 percent. Average preferred shareholders' equity totaled $250, and average common shareholders' equity totaled $7,500. Assume that all the following amounts are in thousands.

REQUIRED:
a. Compute the rate of ROA. Disaggregate ROA into profit margin for ROA and assets turnover components.
b. Compute the rate of ROCE. Disaggregate ROCE into profit margin for ROCE, assets turnover, and capital leverage ratio components.
c. Calculate the amount of net income to common shareholders derived from the excess return on creditors' capital, the excess return on preferred shareholders' capital, and the return on common shareholders' capital.

ANS:
a. Rate of Return on Assets: [$1,903 + (1 – .40)($459)]/$17,500 = 12.4%
Profit Margin for ROA: [$1,903 + (1 – .40)($459)]/$55,618 = 3.9%
Assets Turnover: $55,618/$17,500 = 3.2

b. Rate of Return on Common Shareholders' Equity: ($1,903 – $13.5)/$7,500 = 25.2%

Profit Margin for ROCE: ($1,903 – $13.5)/$55,618 = 3.4%
Assets Turnover: $55,618/$17,500 = 3.2
Capital Structure Leverage Ratio: $17,500/$7,500 = 2.3

c. Average total liabilities equal $9,750 (= $17,500 – $250 – $7,500). Carridine Company earned $1,209 (= .124 x $9,750; allow for rounding) on assets financed by liabilities (calculations taken to more decimal places than shown), while the liabilities cost $275.4 [= (1 – .40)($459)]. Therefore, the excess return generated for the common shareholders on assets financed with liabilities is $933.6 (= $1,209 – $275.4). Carridine Company earned $31 (= .124 x $250) on assets financed by preferred shareholders' equity, while this capital costs $13.5. Therefore, the excess return generated for the common shareholders on assets financed with preferred shareholders' capital is $17.5 (= $31 – $13.5). The assets financed by common shareholders' capital generated a return for the common shareholders of $930 (= .124 × $7,500). Thus net income available to the common shareholders equals $1,867.6 (= $933.6 + $17.5 + $930 = $1,881.1 – $13.5 of net income available to the common shareholders). Carridine Company generated about one-half of the net income available to the common shareholders from the successful use of financial leverage.

PTS: 1 TOP: Problem 4.14

7. Freedom Company reported net income for 2010 of $2,031 million on sales of $25,600 million. Interest expense for 2010 was $235 million, and minority interest was $344 million for 2010. The income tax rate is 40 percent. Total assets were $10,800 million at the beginning of 2010 and $14,874 million at the end of 2010. Compute the rate of ROA for 2010 and disaggregate ROA into profit margin for ROA and asset turnover components.

ANS:

Rate of Return on Assets	=	Profit Margin	×	Assets Turnover

$$0.5\,(\$14{,}874 + \$10{,}800) = \frac{[2{,}031 + (1+.40)(235) + 344]}{\$25{,}600} \times \frac{\$25{,}600}{0.5\,(\$14{,}874 + 10{,}800)}$$

21.2% = 10.6% × 2.0

PTS: 1 TOP: Problem 4.10

8. Rattigan Industries reported net income (amounts in thousands) for Year 4 of $60,615 on sales of $1,560,235. It declared preferred dividends of $22,100. Preferred shareholders' equity totaled $265,750 at both the beginning and end of Year 4. Common shareholders' equity totaled $298,150 at the beginning of Year 4 and $365,000 at the end of Year 4. Rattigan had no minority interest in its equity. Total assets were $1,440,000 at the beginning of Year 4 and $1,550,000 at the end of Year 4.

ANS:
Rate of Return on Common Shareholders' Equity:
($60,615 – $22,100)/[.5($298,150 + $365,000)] = 11.6%
Profit Margin for ROCE:
($60,615 – $22,100)/($1,560,235) = 2.5%
Assets Turnover:
$1,560,235/[.5($1,440,000 + $1,550,000)] = 1.04

Capital Structure Leverage Ratio:
[.5($1,440,000 + $1,550,000)]/[.5($298,150 + $365,000)] = 4.5

PTS: 1 TOP: Problem 4.11

9. Krane, Inc.reported net income (amounts in thousands) of $619,700 for Year 4.Included in net income was income tax expense of $10,400. During the year the company paid the preferred shareholders $9,000 in dividends. The weighted average of common shares outstanding during Year 4 was 468,810 shares. Krane Inc., subtracted interest expense net of tax saving on convertible debt of $4,820. If the convertible debt had been converted into common stock, it would have increased the weighted average common shares outstanding by 20,905 shares. Krane Inc., has outstanding stock options that, if exercised, would increase the weighted average of common shares outstanding by 7,335 shares.

REQUIRED:
Compute basic and diluted earnings per share for Year 4, showing supporting computations.

ANS:
Basic EPS: ($619,700-9,000)/468,810=$1.30
Diluted EPS: ($619,700 + $4,820-9,000)/ (468,810 + 20,905 + 7,335)=$1.24

PTS: 1 TOP: Problem 4.12

10. Raleigh Manufacturing reported net income (amounts in millions) of $1,166 on sales of $5,520 during Year 4. Interest expense totaled $75. The income tax rate was 30 percent. Average total assets were $7,135, and average common shareholders' equity was $3,405. The firm did not have preferred stock outstanding or minority interest in its equity.

REQUIRED:

a. Compute the rate of ROA. Disaggregate ROA into profit margin for ROA and assets turnover components.
b. Compute the rate of ROCE. Disaggregate ROCE into profit margin for ROCE, assets turnover, and capital structure leverage ratio components.
c. Calculate the amount of net income to common shareholders derived from the excess return on creditors' capital and the amount from the return on common shareholders' capital.

ANS:
a. Rate of Return on Assets: [$1,166 + (1 – .30)($75)]/$7,135 = 17.1%
Profit Margin for ROA: [$1,166 + (1 – .30)($75)]/$5,520 = 22.1%
Assets Turnover: $5,520/$7,135 = 0.77

b. Rate of Return on Common Shareholders' Equity: $1,166/$3,405 = 34.2%
Profit Margin for ROCE: $1,166/$5,520 = 21.1%
Assets Turnover: $5,520/$7,135 = .77
Capital Structure Leverage Ratio: $7,135/$3,405 =2.1

c. Average total liabilities equal $3,730 (= $7,135 – $3,405). Raleigh earned $637.8 (= .171 x $3,730) on assets financed by liabilities, while the liabilities cost $52.5 [= (1 – .30)($75)].
Therefore, the excess return generated for the common shareholders on assets financed with liabilities is $585.3 (= $637.8 – $52.5). The assets financed by common shareholders' capital generated a return for the common shareholders of $582.3 (= .171 □ $3,405). Thus, net income available to the common shareholders equals $1,167.6 (= $585.3 + $582.3).

About one-half of the return to the common shareholders results from the successful use of financial leverage.

PTS: 1 TOP: Problem 4.13

11. Below are three relationships that are important to the determination of profitability. Assume assets were $22,900,000 on Dec. 31, 2008.

1. Operating leverage = $\frac{\text{Earnings before interest but after taxes}}{\text{Average assets.}}$
2. Financial structure leverage = $\frac{\text{Net income available to common shareholders}}{\text{Earnings before interest but after taxes}}$

3. ROCE = ROA × Common earnings leverage × Financial structure leverage

REQUIRED:
Compute the operating leverage, financial structure leverage, and ROCE (rounded to two places). Then use these relationships to analyze how the profitability of X-Mart changed over the three year period below. What does the company need to do to reverse this trend? What are the risks of your strategy?

As of Dec. 31	**2009**	**2010**	**2011**
ROA	0.10	0.10	0.08
Assets	$27,500,000	$23,000,000	$27,600,000
Net income available to common shareholders	$67,250,000	$68,960,210	$70,910,840
Earnings after taxes but before interest	$25,000,000	$24,541,000	$24,794,000

ANS:

ROCE has deteriorated somewhat over the three years in question. The drop in 2011 is due to the decline in ROA that was not accompanied by the increased use of financial leverage. Had the company increased its financial structure leverage to 3.44 in 2011, the leverage increase would have fully offset the ROA decline (3.44 × 0.98 × 0.08 = 0.27 ROCE rounded). The financial leverage is increased when a company's cost of debt is less than what the company earns on borrowed funds. The company must weigh this additional borrowing against the possibility of a higher credit risk assigned by lenders, which could potentially harm shareholders.

Common earnings leverage	0.99	0.97	0.98
Financial structure leverage	2.69	2.81	2.86
ROCE	0.27	0.27	0.22

PTS: 1