ESSAY. Write your answer in the space provided or on a separate sheet of paper.

1) In 2010, a biotechnology firm, DNA Map Inc., had $700 million of assets and $280 million of liabilities. Earnings before interest and taxes were $215 million, interest expense was $10 million, and the tax rate was 32%.

(a) Calculate the times-interest-earned.
(b) Calculate the debt-to-equity ratio.
(c) Calculate the net margin.

2) The following data are available for two companies, Apple and Oracle, all stated in thousands of dollars.

Description	Apple	Oracle
Total revenue	$42,905,000	$23,253,000
Earnings before interest and taxes	12,066,000	8,464,000
Interest expenses	0	630,000
Earnings before tax	12,066,000	7,834,000
Taxes at 40%	3,831,000	2,241,000
Earnings after tax (Net income)	8,235,000	5,593,000
Debt	$15,861,000	$22,326,000
Equity	31,640,000	$25,090,000

(a) Calculate each company's return on equity (ROE) and return on asset (ROA)
(b) Which company has performed better in terms of profitability?
(c) If two companies were combined (merged), what would be the impact on the results on ROE? Under what conditions would such a combination make sense?

3) The following shows selected comparative statement data for Dell Corporation. All financial data are as of January 31 in millions.

	2009	2008
Total revenue	$61,101	$61,133
Cost of revenue	$50,144	$49,462
Net income	$2,478	$2,947
Account receivables	$4,731	$7,693
Inventory	$867	$1,180
Current assets	$20,151	$19,880
Long-term liabilities	$7,370	$5,206
Total assets	$26,500	$27,561
Total common shareholders' equity	$4,271	$3,735

For year 2009,
(a) What is the profit margin?
(b) What is the total asset turnover?
(c) What is the current ratio?
(d) What is the return on asset?
(e) What is the return on common shareholders' equity?

4) The following data were taken from the income statements of Broadcom Corporation (BRCM).

Ending inventory	$366,106	$231,313
Total revenue	$4,658,125	$3,776,395
Beginning inventory	$231,313	$202,794
Purchases	$510,711	$566,145

Compute for each year the inventory turnover ratio and what conclusions concerning the management of the inventory can be drawn from the data?

5) Given the following facts, complete the balance sheet:

Given:

- Collection period 45.6 days
- Current ratio 1.38 times
- Quick ratio 1.13
- Inventory turnover ratio 23.5 times
- Time-interest-earned ratio 5.00
- Asset Turnover ratio 1.63
- Return on common equity 28.2%
- Gross margin 32.5%
- Net Margin 7.50%
- Cash $300
- Total sales revenue $4,000
- Total current assets $1,100
- Total assets $2,450

Find:

- Shareholders’ equity
- Long-term debt
- Current liabilities
- Account receivables
- Net income

1)

(a) Time-interest-earned ratio = $\frac{\text{EBIT}}{\text{interest expense}} = \frac{\$215 + \$10}{\$10}$ = 22.5 times

(b) Debt to equity ratio = $\frac{\text{Total debt}}{\text{Equity}} = \frac{\$280}{\$700 - \$280}$ = 66.67%

(c) Net margin = ($215 - $10)(1 - 0.32) = $139.4

2)

(a) Return on common equity = $\frac{\text{Net Income available to common stockholder}}{\text{avg. common equity}}$

$ROE_A = \frac{\$8,235,000}{\$3,164,000}$ = 26.03%

$ROE_O = \frac{\$5,593,000}{\$25,090,000}$ = 22.29%

Return on total assets = $\frac{\text{Net Income} + \text{Interest expense}(1 - \text{tax rate})}{\text{avg. total assets}}$

(b) If we judge the firms purely based on ROE and ROA, Apple performed better than Oracle.

$ROA_A = \frac{\$8,235,000 + 0(1 - 0.4)}{\$15,861,000 + \$31,640,000}$ = 17.34%

$ROA_O = \frac{\$5,593,000 - \$630,000(1 - 0.4)}{\$22,326,000 + \$25,090,000}$ = 12.59%

(c) $ROA_{merge} = \frac{\$8,235,000 + \$5,593,000}{\$3,164,000 + \$25,090,000}$ = 24.38%

It seems merging improves the shareholders' value.

3)

	2009	2008
Profit margin on sales	0.0406	0.0482
Total asset turnover	2.3057	2.2181
Current ratio	1.3561	1.0677
Return on asset	0.0917	0.1069
Return on common shareholders' equity	0.6190	0.7890

(a) Profit margin on sales = $\frac{\text{Net Income}}{\text{Sales}} = \frac{\$2,478}{\$61,101}$ = 4.06%

(b) Total assets turnover ratio = $\frac{\text{Sales}}{\text{Total Assets}} = \frac{\$61,101}{\$26,500}$ = 2.3057 times

(c) Current ratio = $\frac{\text{Current assets}}{\text{Current liabilities}} = \frac{\$20,151}{\$26,500 - \$4,271 - \$7,370}$ = 1.3561

(d) Return on total assets = $\frac{\text{Net Income} + \text{Interest expense}(1 - \text{tax rate})}{\text{avg. total assets}}$ = 0.0917

(e)

$$\text{Return on common equity} = \frac{\text{Net Income}}{\text{avg. common equity}} = \frac{\$2{,}478}{\$4{,}271 + \$3{,}735} = 0.6190$$

4)

$$\text{Inventory turnover ratio} = \frac{\text{Sales}}{\text{Average inventory balance}}$$

	2009	2008
Total revenue	$4,658,125	$3,776,395
Beginning inventory	$231,313	$202,794
Purchases	$510,711	$566,145
Ending inventory	$366,106	$231,313
Inventory turnover	15.59	17.40

Inventory turnover in 2009 is slower than the ratio in 2008. It means the company was holding more excess stocks of inventory in 2009.

5)

$$\text{DSO} = \frac{\text{A/R}}{\text{Sales}/365} = \frac{\text{A/R}}{\$4{,}000/365} = 45.6 \text{ days}$$

∴ A/R = $500

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}} = \frac{\$1{,}100}{\text{Current liabilities}} = 1.38$$

∴ Current liabilities = $797

$$\text{Net margin} = \frac{\text{Net Income}}{\text{Sales}} = \frac{\text{Net Income}}{\$4{,}000} = 7.5\%$$

∴ Net Income = $300

$$\text{Return on common equity} = \frac{\text{Net Income}}{\text{avg. common equity}} = \frac{\$300}{\text{avg. common equity}} = 28.2\%$$

∴ Avg. common equity = $1,064

Total liabilities = Current liabilities + Long term liabilities + Common Equity
= $797 + Long term liabilities + $1,064 = $2,450

∴ Long term liabilities = $589