Problem 1

a.

$$\text{Return on equity} = \frac{\$1{,}225}{(\$11{,}224 + 10{,}121) / 2} = 0.1148, \text{ or } 11.48\%$$

b.

$$\text{Return on assets} = \frac{\$1{,}225 + 710 \times (1 - 0.30)}{(\$28{,}119 + 27{,}758) / 2} = 0.0616, \text{ or } 6.16\%$$

c.

$$\text{Return on capital} = \frac{\$1{,}225 + 710 \times (1 - 0.30)}{[(\$5{,}773 + 11{,}224) + (\$5{,}938 + 10{,}121)] / 2} = 0.1042, \text{ or } 10.42\%$$

d.

$$\text{Days in inventory} = \frac{\$263}{\$4{,}310 / 365} = 22.27 \text{ days}$$

e.

$$\text{Inventory turnover} = \frac{\$4{,}310}{263} = 16.39$$

f.

$$\text{Average collection period} = \frac{\$2{,}590}{\$13{,}600 / 365} = 69.51 \text{ days}$$

g.

$$\text{Operating profit margin} = \frac{\$1{,}225 + 710 \times (1 - 0.30)}{\$13{,}600} = 0.1266, \text{ or } 12.66\%$$

h.

$$\text{Long-term debt ratio} = \frac{\$5{,}773}{\$5{,}773 + 11{,}224} = 0.34$$

i.

$$\text{Total debt ratio} = \frac{\$4{,}894 + 5{,}773 + 6{,}228}{\$28{,}119} = 0.60$$

j.

$$\text{Times interest earned} = \frac{\$2{,}460}{\$710} = 3.46$$

k.

$$\text{Cash coverage ratio} = \frac{\$2{,}460 + 2{,}668}{\$710} = 7.22$$

l.

$$\text{Current ratio} = \frac{\$3{,}830}{\$4{,}894} = 0.78$$

m.

$$\text{Quick ratio} = \frac{\$94 + 2{,}632}{\$4{,}894} = 0.56$$

Problem 2

a. Debt / Equity = $470 / $250 = 1.88

b. Total long-term debt / Total long-term capital = $250 / ($250 + $250) = 0.50

c. Net working capital = $160 – $90 = $70

d. Current ratio = $160 / $90 = 1.78

Problem 3

EBIT = Revenues − COGS − Depreciation

= $3,060,000 − 2,560,000 − 156,560

= $343,440

Interest = 0.08 × $1.06 million

= $84,800

Times interest earned = $343,440 / $84,800 = 4.05

Problem 4

$$\text{ROA} = \frac{\text{Sales}}{\text{Assets}} \times (\text{Operating profit margin})$$

$$0.10 = \frac{\$195 \text{ million}}{\$340 \text{ million}} \times (\text{Operating profit margin})$$

Operating profit margin = 0.1744, or 17.44%

Problem 5

a. ROA = Asset turnover × Operating profit margin = 1 × 0.07 = 0.0700, or 7.00%

b. If Debt / Equity = 1, then Debt = Equity, so total assets are twice equity.

Net income = EBIT – Interest – Taxes = $27,000 – $9,400 – $9,400 = $8,200

$$\text{ROE} = \frac{\text{Assets}}{\text{Equity}} \times \text{ROA} \times \frac{\text{Net income}}{\text{After-tax operating income}}$$

$$\text{Tax rate} = \frac{\text{Taxes}}{\text{EBT}} = \frac{\$9,400}{\$27,000 - \$9,400} = 0.5341, \text{ or } 53\%$$

$$\text{ROE} = \frac{2}{1} \times \text{ROA} \times \frac{\$8,200}{\$8,200 + \$9,400 \times (1 - 0.53)} = 0.0913, \text{ or } 9.13\%$$

Problem 6

a. The market value added will fall, because market value falls while book value of stockholders' equity is unchanged.

b. Based on the decline in market value added, you probably will downgrade your evaluation of the success of firm management.

c. Home Depot actually did better than the rest of the market. Perhaps the whole economy was struggling, and Home Depot was able to manage the recession better than most other firms. This would be an important factor indicating successful management.

d. The lesson is that when we look at increments to market value added, it can be useful to take as a benchmark the performance of the broad market. We might want to see the firm's performance relative to that of the broad market in which it operates.