Exercise 12-10 (15 minutes)

1.
$$\text{Margin} = \frac{\text{Net operating income}}{\text{Sales}}$$
$$= \frac{\$150{,}000}{\$3{,}000{,}000} = 5\%$$
$$\text{Turnover} = \frac{\text{Sales}}{\text{Average operating assets}}$$
$$= \frac{\$3{,}000{,}000}{\$750{,}000} = 4$$
$$\text{ROI} = \text{Margin} \times \text{Turnover}$$
$$= 5\% \times 4 = 20\%$$

2.
$$\text{Margin} = \frac{\text{Net operating income}}{\text{Sales}}$$
$$= \frac{\$150{,}000(1.00 + 2.00)}{\$3{,}000{,}000(1.00 + 0.50)}$$
$$= \frac{\$450{,}000}{\$4{,}500{,}000} = 10\%$$
$$\text{Turnover} = \frac{\text{Sales}}{\text{Average operating assets}}$$
$$= \frac{\$3{,}000{,}000(1.00 + 0.50)}{\$750{,}000}$$
$$= \frac{\$4{,}500{,}000}{\$750{,}000} = 6$$
$$\text{ROI} = \text{Margin} \times \text{Turnover}$$
$$= 10\% \times 6 = 60\%$$

Exercise 12-10 (continued)

3.

$$\text{Margin} = \frac{\text{Net operating income}}{\text{Sales}}$$

$$= \frac{\$150{,}000 + \$200{,}000}{\$3{,}000{,}000 + \$1{,}000{,}000}$$

$$= \frac{\$350{,}000}{\$4{,}000{,}000} = 8.75\%$$

$$\text{Turnover} = \frac{\text{Sales}}{\text{Average operating assets}}$$

$$= \frac{\$3{,}000{,}000 + \$1{,}000{,}000}{\$750{,}000 + \$250{,}000}$$

$$= \frac{\$4{,}000{,}000}{\$1{,}000{,}000} = 4$$

$$\text{ROI} = \text{Margin} \times \text{Turnover}$$

$$= 8.75\% \times 4 = 35\%$$