**Solutions for HW chap 3. (9th ed)**

**1.** Using the formula for NWC, we get:

 NWC = CA – CL

 CA = CL + NWC = $3,720 + 1,370 = $5,090

 So, the current ratio is:

 Current ratio = CA / CL = $5,090/$3,720 = 1.37 times

 And the quick ratio is:

 Quick ratio = (CA – Inventory) / CL = ($5,090 – 1,950) / $3,720 = 0.84 times

**4.** Inventory turnover = COGS / Inventory

 Inventory turnover = $4,105,612 / $407,534 = 10.07 times

 Days’ sales in inventory = 365 days / Inventory turnover = 365 / 10.07 = 36.23 days

 On average, a unit of inventory sat on the shelf 36.23 days before it was sold.

**5.** Total debt ratio = 0.63 = TD / TA

 Substituting total debt plus total equity for total assets, we get:

 0.63 = TD / (TD + TE)

 Solving this equation yields:

 0.63(TE) = 0.37(TD)

 Debt/equity ratio = TD / TE = 0.63 / 0.37 = 1.70

 Equity multiplier = 1 + D/E = 2.70

**12.** The equity multiplier is:

EM = 1 + D/E

 EM = 1 + 0.65 = 1.65

 One formula to calculate return on equity is:

 ROE = (ROA)(EM)

 ROE = .085(1.65) = .1403 or 14.03%

 ROE can also be calculated as:

 ROE = NI / TE

 So, net income is:

 NI = ROE(TE)

 NI = (.1403)($540,000) = $75,735.

**19.** This is a multi-step problem involving several ratios. It is often easier to look backward to determine where to start. We need receivables turnover to find days’ sales in receivables. To calculate receivables turnover, we need credit sales, and to find credit sales, we need total sales. Since we are given the profit margin and net income, we can use these to calculate total sales as:

 PM = 0.087 = NI / Sales = $218,000 / Sales; Sales = $2,505,747

Credit sales are 70 percent of total sales, so:

 Credit sales = $2,515,747(0.70) = $1,754,023

 Now we can find receivables turnover by:

 Receivables turnover = Credit sales / Accounts receivable = $1,754,023 / $132,850 = 13.20 times

 Days’ sales in receivables = 365 days / Receivables turnover = 365 / 13.20 = 27.65 days

**24.** The only ratio given which includes cost of goods sold is the inventory turnover ratio, so it is the last ratio used. Since current liabilities is given, we start with the current ratio:

 Current ratio = 1.40 = CA / CL = CA / $365,000

 CA = $511,000

 Using the quick ratio, we solve for inventory:

 Quick ratio = 0.85 = (CA – Inventory) / CL = ($511,000 – Inventory) / $365,000

 Inventory = CA – (Quick ratio × CL)

 Inventory = $511,000 – (0.85 × $365,000)

 Inventory = $200,750

 Inventory turnover = 5.82 = COGS / Inventory = COGS / $200,750

 COGS = $1,164,350