Solution:

(1)

The gross profit percentage is given by:

$$Gross\ Profit\ \%age = \frac{\$2{,}400{,}000}{\$6{,}000{,}000} \times 100 = 40.0\%$$

The inventory turnover is given by:

$$Inventory\ Turnover = \frac{\$3{,}600{,}000}{\$1{,}200{,}000} = 3.00$$

(2)

Since the gross profit and the percentage of gross profit is unchanged, this means that the sales and hence, the cost of goods sold should also remain unchanged.

Thus, the cost of goods sold is $3,600,000. The inventory average is $1,000,000, resulting in an inventory turnover of

$$Inventory\ Turnover = \frac{\$3{,}600{,}000}{\$1{,}000{,}000} = 3.60$$

(3)

The inventory turnover is assumed to be 3.00, and the average inventory is $1,000,000. By using the formula, we see that the cost of goods sold is given by:

$$Cost\ of\ Goods\ Sold = 3.00 \times \$1{,}000{,}000 = \$3{,}000{,}000$$

Since we need the same gross profit ($2,400,000) as the previous, we see that the net sales will be:

$$Net\ Sales = \$3{,}000{,}000 + \$2{,}400{,}000 = \$5{,}400{,}000$$

Thus, the gross profit percentage is given by:

$$Gross\ Profit\ \%age = \frac{\$2{,}400{,}000}{\$5{,}400{,}000} \times 100 = 44.4\%$$

(4)

(a) 10% decrease in inventory turnover implies that the new inventory turnover is 90% of previous inventory turnover (3.00).

Thus, the new inventory turnover is 2.70.

Thus, the cost of goods sold, based on the formula is given by:

$$Cost\ of\ Goods\ Sold = 2.70 \times \$1{,}200{,}000 = \$3{,}240{,}000$$

The gross profit percentage has increased by 10% from the previous one i.e. the new percentage is 110% of the previous one (40.0%).

Thus, the new gross profit percentage is 44%.

Based on this, the total gross profit for the year will be:

$$Gross\ Profit = \frac{0.44}{0.56} \times \$3{,}240{,}000 = \$2{,}545{,}714.29$$

(b) 10% increase in inventory turnover implies that the new inventory turnover is 110% of previous inventory turnover (3.00).

Thus, the new inventory turnover is 3.30.

Thus, the cost of goods sold, based on the formula is given by:

$$Cost\ of\ Goods\ Sold = 3.30 \times \$1{,}200{,}000 = \$3{,}960{,}000$$

The gross profit percentage has decreased by 10% from the previous one i.e. the new percentage is 90% of the previous one (40.0%).

Thus, the new gross profit percentage is 36%.

Based on this, the total gross profit for the year will be:

$$Gross\ Profit = \frac{0.36}{0.64} \times \$3{,}960{,}000 = \$2{,}227{,}500$$

(5)

Retailors find this ratio useful because it helps them to analyze the general trend of their inventory sales. Clearly, the above example shows that an equal amount of decrease in inventory turnover could compensate for the increase in the gross profit percentage, which can encourage companies to reduce their stock a bit.