

Quiz Chapter 12 (Take-home) Solutions

Problem 1

Contribution margin lost if the Bath Department is dropped:	
Lost from the Bath Department.....	\$700,000
Lost from the Kitchen Department (10% × \$2,400,000)	<u>240,000</u>
Total lost contribution margin	940,000
Less avoidable fixed costs (\$900,000 – \$370,000)	<u>530,000</u>
Decrease in overall net operating income	<u>\$410,000</u>

Problem 2

(Note: Due limitations in fonts and word processing software, > and < signs must be used in this solution rather than "greater than or equal to" and "less than or equal to" signs.)

a. From the perspective of Division X, profits would increase as a result of the transfer if and only if:

Transfer price > Variable cost + Opportunity cost

The opportunity cost is the contribution margin on the lost sales, divided by the number of units transferred:

Opportunity cost = [(\$30.00 per unit - \$21.00 per unit - \$2.00 per unit) × 1,000 units*]/5,000 units = \$1.40 per unit

* Demand from outside customers.....	26,000
Units required by Division X	<u>5,000</u>
Total requirements.....	31,000
Capacity.....	<u>30,000</u>
Required reduction in sales to outside customers	<u>1,000</u>

Therefore, Transfer price > \$21.00 per unit + \$1.40 per unit = \$22.40 per unit.

From the viewpoint of Division K, the transfer price must be less than the cost of buying the units from the outside supplier. Therefore,

Transfer price < \$26.00.

Combining the two requirements, we get the following range of transfer prices:

\$22.40 < Transfer price < \$26.00.

b. Yes, the transfer should take place. From the viewpoint of the entire company, the cost of transferring the units within the company is \$22.40, but the cost of purchasing them from the outside supplier is \$26.00. Therefore, the company's profits increase on average by \$3.60 for each of the special parts that is transferred within the company.