

## Chapter 9 - Homework Questions and Problems Answers

**1. Relevant Cash Flows. Relevant Cash Flows.** Kenny, Inc., is looking at setting up a new manufacturing plant in South Park. The company bought some land six years ago for \$5.3 million in anticipation of using it as a warehouse and distribution site, but the company has since decided to rent facilities elsewhere. The land would net \$7.4 million if it were sold today. The company now wants to build its new manufacturing plant on this land; the plant will cost \$26.5 million to build, and the site requires \$1.32 million worth of grading before it is suitable for construction. What is the proper cash flow amount to use as the initial investment in fixed assets when evaluating this project? Why?

**Answer:** The \$5.3 million acquisition cost of the land six years ago is a sunk cost. The \$7.4 million current aftertax value of the land is an opportunity cost if the land is used rather than sold off. The \$26.5 million cash outlay and \$1,320,000 grading expenses are the initial fixed asset investments needed to get the project going. Therefore, the proper year zero cash flow to use in evaluating this project is:

$$\begin{aligned}\text{Cash flow} &= \$7,400,000 + 26,500,000 + 1,320,000 \\ \text{Cash flow} &= \$35,220,000\end{aligned}$$

**3. Calculating Projected Net Income.** A proposed new investment has projected sales of \$645,000. Variable costs are 40 percent of sales, and fixed costs are \$168,000; depreciation is \$83,000. Prepare a pro forma income statement assuming a tax rate of 35 percent. What is the projected net income?

**Answer:** We need to construct an income statement. The income statement is:

Sales	\$ 645,000
Variable costs	258,000
Fixed costs	168,000
Depreciation	<u>83,000</u>
EBIT	\$ 136,000
Taxes@35%	<u>47,600</u>
Net income	<u>\$ 88,400</u>

**16. Scenario Analysis.** Automatic Transmissions, Inc., has the following estimates for its new gear assembly project: price = \$960 per unit; variable cost = \$350 per unit; fixed costs = \$3.6 million; quantity = 55,000 units. Suppose the company believes all of its estimates are accurate only to within  $\pm 15$  percent. What values should the company use for the four variables given here when it performs its best-case scenario analysis? What about the worst-case scenario?

**Answer:** The base-case, best-case, and worst-case values are shown below. Remember that in the best-case, sales and price increase, while costs decrease. In the worst case, sales and price decrease, and costs increase.

<u>Scenario</u>	<u>Unit Sales</u>	<u>Unit Price</u>	<u>Unit Variable Cost</u>	<u>Fixed Costs</u>
Base case	55,000	\$960	\$350	\$3,600,000
Best case	63,250	\$1,104	\$298	\$3,060,000
Worst case	46,750	\$816	\$403	\$4,140,000