CHAPTER 6: COST VOLUME PROFIT ANALYSIS

QUESTION 1.

Kevin Hobbs has three booth rental options at the county fair where he plans to sell his new product. The booth rental options are:

Option 1: $10,000 fixed fee

Option 2: $7,500 fixed fee + 6% of all revenues generated at the fair

Option 3: 30% of all revenues generated at the fair.

The product sells for $37.50 per unit. He is able to purchase the units for $12.50 each.

a. Draw Profit Volume (PV) Graph for these options.

b. At which level of quantity is the option 1 is the best alternative?

c. At which level of quantity is the option 2 is the best alternative?

d. At which level of quantity is the option 3 is the best alternative?

QUESTION 2.

Assuming a constant mix of 3 units of Small for every 1 unit of Large, a selling price of $21.60 for Small and $28.80 for Large, variable costs per unit of $14.40 for Small and $16.80 for Large, and total fixed costs of $53,760, How many units would be the break-even point?

QUESTION 3.

Clever Shoes Company sells men's shoes with identical unit costs and selling prices. A unit is defined as a pair of shoes. Clever Shoes expects the following revenue and cost relationships:

Unit variable data (per pair of shoes)	
Selling price	$50
Cost of shoes	$37
Sales commisions	$ 2
Monthly fixed data:	
Rent	$ 5,000
Salaries	$19,000
Advertising	$20,000

a. What is the monthly breakeven in units and in dollars

b. If 3,500 units are sold, what will be the store's monthly operating income (loss)?

c. How many units shold be sold in order to make $15,000 profit.

QUESTION 4.

Samuel Company has provided you with the following financial data:

Variable costs per unit	$765
Selling price per unit	1,020
Total fixed costs	$3,060,000
Tax rate	% 40

Required:

a. Compute the break-even point in units.

b. Compute the break-even volume in dollars.

c. Compute the target sales volume in units assuming a targeted net income before taxes of $382,500

d. Compute the target sales volume in dollars assuming a targeted net income before taxes of $510,000

e. Compute the target sales volume in dollars assuming a targeted net income after taxes of $100,000

QUESTION 5.

Sarah Adams Company sells pillows for $25.00 each. The manufacturing cost, all variable, is $10 per pillow. The company is planning on renting an exhibition booth for both display and selling purposes at the annual crafts and art convention. The convention coordinator allows three options for each participating company. They are:

1. paying a fixed booth fee of $5,010, or
2. paying a $4,000 fee plus 10% of revenue made at the convention, or
3. paying 20% of revenue made at the convention.

Required:

a. Compute the break-even sales in pillows of each option.

b. Which option should Sarah Adams Company choose, assuming sales are expected to be 800 pillows?

QUESTION 6.

The Holiday Card Company, a producer of specialty cards, has asked you to complete several calculations based upon the following information:

Selling price per unit	$6.60
Direct material cost per unit	1.28
Direct labor cost per unit	1.00
Variable manufacturing cost per unit	0.50
Variable non-manufacturing cost per unit	2.50
Total fixed costs	46,200
Income tax rate	30%

Required:

a. Compute the break-even point in units.

b. Compute the sales volume necessary to produce an after-tax net income of $10,000.

c. Compute the total units sold to earn an after-tax net income of $20,000.

QUESTION 7.

Gülsüm Yalçın, a college student, plans to operate a hot dog stand at the beach during the summer for three months. His fixed costs for the booth, which include utilities, will be $4,160. Variable costs per hot dog will be $0.80 for materials and $0.16 for a franchise fee from the hot dog supplier. This year's sales are expected to be 20,000 units, based on the operation of the same booth the prior year. Gülsüm needs to earn $8,000 so that he can pay part of his college expenses for the coming academic year.

Determine the price he needs to charge to earn a profit of $8,000.

QUESTION 8.

Atlantis Company has a current production level of 22,000 units per month. Unit costs at this level are:

Direct materials	$0.25
Direct labor	0.40
Variable manufacturing overhead	0.15
Fixed manufacturing overhead	0.20
Fixed marketing expenses	0.20
Variable marketing/distribution expenses	0.30

Current monthly sales are 19,000 units. Barry Company has contacted Atlantis Company about purchasing 1,500 units at $1.80 each. Current sales would not be affected by the special order, and variable marketing/ distributing costs would not be incurred on the special order.

Required:

What is Atlantis Company's change in profits using the contribution margin format if the order is accepted?