Management Accounting Chapter 4 Exercises

3-17 **CVP computations.** Garrett Manufacturing sold 410,000 units of its product for $68 per unit in 2014. Variable cost per unit is $60, and total fixed costs are $1,640,000.
1. Calculate (a) contribution margin and (b) operating income.
2. Garrett's current manufacturing process is labor intensive. Kate Schoenen, Garrett's production manager, has proposed investing in state-of-the-art manufacturing equipment, which will increase the annual fixed costs to $5,330,000. The variable costs are expected to decrease to $54 per unit. Garrett expects to maintain the same sales volume and selling price next year. How would acceptance of Schoenen's proposal affect your answers to (a) and (b) in requirement 1?
3. Should Garrett accept Schoenen's proposal? Explain.

3-22 **CVP analysis, income taxes.** The Swift Meal has two restaurants that are open 24 hours a day.
Fixed costs for the two restaurants together total $456,000 per year. Service varies from a cup of coffee to full meals. The average sales check per customer is $9.50. The average cost of food and other variable costs for each customer is $3.80. The income tax rate is 30%. Target net income is $159,600.
1. Compute the revenues needed to earn the target net income.
2. How many customers are needed to break even? To earn net income of $159,600?
3. Compute net income if the number of customers is 145,000.

3-23 **CVP analysis, sensitivity analysis.** Tuff Kids Jeans Co. sells blue jeans wholesale to major retailers across the country. Each pair of jeans has a selling price of $30 with $21 in variable costs of goods sold.
The company has fixed manufacturing costs of $1,200,000 and fixed marketing costs of $300,000. Sales commissions are paid to the wholesale sales reps at 5% of revenues. The company has an income tax rate of 25%.
1. How many jeans must Tuff Kids sell in order to break even?
2. How many jeans must the company sell in order to reach:
a. a target operating income of $450,000?
b. a net income of $450,000?
3. How many jeans would TuffKids have to sell to earn the net income in part 2b if (consider each requirement independently).
a. The contribution margin per unit increases by 10%
b. The selling price is increased to $32.50
c. The company outsources manufacturing to an overseas company increasing variable costs per unit by $2.00 and saving 60% of fixed manufacturing costs.

3-24 **CVP analysis, margin of safety.** Suppose Lattin Corp.'s breakeven point is revenues of $1,500,000. Fixed costs are $720,000.
1. Compute the contribution margin percentage.
2. Compute the selling price if variable costs are $13 per unit.
3. Suppose 90,000 units are sold. Compute the margin of safety in units and dollars.
4. What does this tell you about the risk of Lattin making a loss? What are the most likely reasons for this risk to increase?

3-25 **Operating leverage.** Carmel Rugs is holding a 2-week carpet sale at Jean's Club, a local warehouse store. Carmel Rugs plans to sell carpets for $1,000 each. The company will purchase the carpets from a local distributor for $400 each, with the privilege of returning any unsold units for a full refund. Jean's Club has offered Carmel Rugs two payment alternatives for the use of space.

- Option 1: A fixed payment of $17,400 for the sale period
- Option 2: 20% of total revenues earned during the sale period

Assume Carmel Rugs will incur no other costs.

1. Calculate the breakeven point in units for (a) option 1 and (b) option 2.
2. At what level of revenues will Carmel Rugs earn the same operating income under either option?
a. For what range of unit sales will Carmel Rugs prefer option 1?
b. For what range of unit sales will Carmel Rugs prefer option 2?
3. Calculate the degree of operating leverage at sales of 87 units for the two rental options.
4. Briefly explain and interpret your answer to requirement 3.

3-31 **Contribution margin, gross margin, and margin of safety.** Mirabella Cosmetics manufactures and sells a face cream to small ethnic stores in the greater New York area. It presents the monthly operating income statement shown here to George Lopez, a potential investor in the business. Help Mr. Lopez understand Mirabella's cost structure.

	A	B	C	D
1	Mirabella Cosmetics			
2	Operating Income Statement, June 2014			
3	Units sold			10,000
4	Revenues			$100,000
5	Cost of goods sold			
6	Variable manufacturing costs		$55,000	
7	Fixed manufacturing costs		20,000	
8	Total			75,000
9	Gross margin			25,000
10	Operating costs			
11	Variable marketing costs		$ 5,000	
12	Fixed marketing & administration costs		10,000	
13	Total operating costs			15,000
14	Operating income			$ 10,000

1. Recast the income statement to emphasize contribution margin.
2. Calculate the contribution margin percentage and breakeven point in units and revenues for June 2014.
3. What is the margin of safety (in units) for June 2014?
4. If sales in June were only 8,000 units and Mirabella's tax rate is 30%, calculate its net income.