EXERCISE 5–14 Break-Even and Target Profit Analysis [LO5–3, LO5–4, LO5–5, LO5–6]

Lindon Company is the exclusive distributor for an automotive product that sells for $40 per unit and has a CM ratio of 30%. The company's fixed expenses are $180,000 per year. The company plans to sell 16,000 units this year.

Required:

1. What are the variable expenses per unit?
2. Using the equation method:
   a. What is the break-even point in unit sales and in dollar sales?
   b. What amount of unit sales and dollar sales is required to earn an annual profit of $60,000?
   c. Assume that by using a more efficient shipper, the company is able to reduce its variable expenses by $4 per unit. What is the company's new break-even point in unit sales and in dollar sales?

1. Variable expenses: $40 × (100% – 30%) = $28

2. a.

Selling price	$40	100%
Variable expenses.....	28	70%
Contribution margin.....	$12	30%

Profit = Unit CM × Q – Fixed expenses
$0 = $12 × Q – $180,000
$12Q = $180,000
Q = $180,000 ÷ $12
Q = 15,000 units

In dollar sales: 15,000 units × $40 per unit = $600,000

b. Profit = Unit CM × Q – Fixed expenses
$60,000 = $12 × Q – $180,000
$12Q = $60,000 + $180,000
$12Q = $240,000
Q = $240,000 ÷ $12
Q = 20,000 units

In dollar sales: 20,000 units × $40 per unit = $800,000

c. The company's new cost/revenue relation will be:

Selling price.....	$40	100%
Variable expenses ($28 – $4)	24	60%
Contribution margin	$16	40%

Profit = Unit CM × Q – Fixed expenses
$0 = ($40 – $24) × Q – $180,000
$16Q = $180,000
Q = $180,000 ÷ $16 per unit
Q = 11,250 units

In dollar sales: 11,250 units × $40 per unit = $450,000