Problem 6-24A: Part 1

Break-even point = Fixed expenses ÷ Unit contribution margin.
Break-even point = $60,000 ÷ $24 = 2,500 pairs
Break-even point in sales = 2,500 x $40 = $100,000

Part 1 – Alternative Solution

Sales = Variable Cost + Fixed Cost + Profit
Let X = # pairs of sandals needed to break even
$40X = $16X + $60,000 + $0
$24X = $60,000
X = $60,000 ÷ $24 = 2,500 pairs of sandals
Break-even point in sales = 2,500 x $40 = $100,000 in sales

Part 2: Cost-Volume-Profit Graph
Part 3

Number of pairs of sandals = (Fixed expenses + Target profit) ÷ Unit contribution margin.
Number of pairs of sandals = ($60,000 + $18,000) ÷ $24 = 3,250 pairs of sandals

Part 3 – Alternative Solution

Sales = Variable Cost + Fixed Cost + Profit
Let X = # pairs of sandals needed to earn a profit of $18,000
$40X = $16X + $60,000 + $18,000
$24X = $78,000
X = $78,000 ÷ $24 = 3,250 pairs of sandals

Part 4

Incremental contribution margin:
$25,000 increased sales x 60% CM ratio $15,000
Incremental fixed salary cost 8,000
Increased net income $7,000
Conclusion: Yes, the position should be converted to full-time
Part 5

a) Degree of operating leverage = Contribution margin ÷ Net income = $72,000 ÷ $12,000 = 6

b) 6 x 50% sales increase = 300% increase in net income. With this, net income next year would be $48,000 ($12,000 + (12,000 x 300%)).