

Solutions Chapter 11

Exercise 11.1

- a. Cost per unit = $\text{€}54,000/2,000 + \text{€}60,000/2,500 = \text{€}51$.
b. $4,500 * \text{€}27 + \text{€}60,000 = \text{€}181,500$.

Exercise 11.2

- Fixed cost = $0.60 * \$24,000 = \$14,400$. Variable costs = $\$24,000 - \$14,400 = \$9,600$.
Variable per unit = $\$9,600/6,000 = \1.60 .
Total cost $5,000 * \$1.60 + \$14,400 = \$22,400$.

Exercise 11.3

- a. Variable per unit: $\text{€}15,400/2,200 = \text{€}7$. Cost per unit will be: $\text{€}7 * 1.05 + (\text{€}12,000 * 1.04)/2,000 = \text{€}13.59$.
b. $1,800 * \text{€}7.35 + \text{€}12,480 = \text{€}25,710$.

Exercise 11.4

- a. Fixed cost per unit = $0.6 * \$45 = \27 . $\$337,500/N = \27 . $N = 12,500$.
b. $12,000 * \$18 + \$337,500 = \$553,500$.

Exercise 11.5

- a. Average is 100,000 per year.
b. Cost per unit = $\$5 + \$250,000/100,000 = \$7.50$
c. Profit = $120,000(\$11 - \$5) - \$250,000 = \$470,000$.
(No need to distinguish between AC and DC since production equals sales).

Exercise 11.6

- a. $\$0.70 + \$150,000/100,000 = \$2.20$

b.

Sales volume result: $95,000 * (\$3 - \$2.20) = \$76,000$
Production volume result: $(95,000 - 100,000) * \$1.50 = \underline{\$7,500} -$
 $\$68,500$

c.

Sales:	$95,000 * \$3 =$	$\$285,000$
Fixed costs	$\$150,000$	
Variable costs	$95,000 * \$0.7 = \underline{\$66,500}$	
Production costs	$\$216,500$	
Cost of sales		$\underline{\$216,500} -$
Profit		$\$68,500$

d.

Sales volume result: $95,000 * (\$3 - \$2.20) = \$76,000$
Production volume result: $(105,000 - 100,000) * \$1.50 = \underline{\$7,500} +$
 $\$83,500$

e.

Sales:	95,000*\$3 =	\$285,000
Fixed costs	\$150,000	
Variable costs	105,000*\$0.7=	<u>\$73,500</u>
Production costs		\$223,500
Inventory change: 10,000*\$2.20 =	\$22,000	
Cost of sales		<u>\$201,500 -</u>
Profit		\$83,500

Exercise 11.7

a. Variable cost per unit = \$42,000/12,000=\$3.50.

BEP = \$150,000/(\$23.50 - \$3.50) = 7,500 units.

b. Cost per unit = \$3.50+\$150,000/10,000 = \$18.50.

Sales volume result: 11,000*(\$23.50 - \$18.50) = \$55,000
 Production volume result: (12,000 - 10,000)*\$15 = \$30,000 +
 \$85,000

c. Contribution margin: 11,000(\$23.50 - \$3.50) = \$220,000
 Fixed costs: \$150,000 -
 Profit \$ 70,000

d. Inventory change is 1,000 units. Profit difference = 1,000*\$15 = \$15,000.

e. Absorption costing profit will increase due to better production volume result. Direct costing profit will stay the same.

f.

Sales volume result: 11,000*(\$23.50 - \$18.50) = \$55,000
 Production volume result: (13,000 - 10,000)*\$15 = \$45,000 +
 \$100,000

Contribution margin: 11,000(\$23.50 - \$3.50) = \$220,000
 Fixed costs: \$150,000 -
 Profit \$ 70,000

Exercise 11.8

a. Production is 12,500 units. Sales is 12,500 - 1,500 = 11,000 units. Sales price is \$93,500/11,000 = \$8.50.

Fixed cost per unit = \$6.50 - \$2.50 = \$4. Normal production is \$48,000/\$4 = 12,000 units.

Sales volume result: 11,000*(\$8.50 - \$6.50) = \$22,000
 Production volume result: (12,500 - 12,000)*\$4 = \$ 2,000 +
 Profit \$ 24,000

b.

Contribution margin: 11,000(\$8.50 - \$2.50) = \$ 66,000
 Fixed costs: \$ 48,000 -
 Profit \$ 18,000

c. BEP = \$48,000/(\$8.50 - \$2.50) = 8,000

Exercise 11.9

a. Standard fixed cost per unit = $\$700/100 = \7 . Inventory decreases so profit DC must be higher than profit AC.

Profit DC = $\$755 + 15 * \$7 = \$860$.

b. Contribution margin = $\$860 + \$700 = \$1,560$. Margin per unit = $\$1,560/120 = \13 .

Sales price = $\$13 + \$12 = \$25$.

c. BEP = $\$700/(\$25-\$12) = 53.85$ units.