

## Solutions Chapter 10

### Exercise 10.1

a. (\$)

	Change	Variable per unit	Fixed
Labor	40,000	$40,000/20,000=2$	$270,000 - 110,000*2 = 50,000$
Materials	60,000	$60,000/20,000=3$	$330,000 - 110,000*3 = 0$
Depreciation	0	0	200,000
Other	10,000	$10,000/20,000=0.5$	$130,000 - 110,000*0.5 = 75,000$
		5.50	325,000

b.  $\$5.50 + \$325,000/120,000 = \$8.21$ .

c.  $13.5Q = 5.5Q + 325,000$ .  $Q = 40,625$  units.

### Exercise 10.2

Kilos needed:  $10/0.8 = 12.5$ .  $12.5*\$15 = \$187.50$ .

Cost per unit:  $\$187.50/0.95 = \$197.37$ .

### Exercise 10.3

Kilos needed:  $47.5/0.95 = 50$ .

Cost per unit produced:  $50*\$6 + \$60 = \$360$ .

Cost for approved unit:  $(\$360 - 0.10*\$50)/0.9 = \$394.44$ .

### Exercise 10.4

a. Depreciation every year:  $(\$1,200,000 - \$120,000)/8 = \$135,000$ .

Book value:  $\$1,200,000 - 5*\$135,000 = \$525,000$ .

b. Depreciation first year =  $0.25*\$1,200,000 = \$300,000$ . Depreciation fifth year =  $\$300,000*(0.75)^4 = \$94,922$ .

Book value:  $\$1,200,000*(0.75)^5 = \$284,766$ .

c. Sum is 36. Depreciation fifth year =  $4/36*\$1,080,000 = \$120,000$ .

Book value =  $\$1,200,000 - 30/36*\$1,080,000 = \$300,000$ .

### Exercise 10.5

Margin per unit =  $\$30 - \$4 - \$18 = \$8$ . This requires two hours of labor. So, per labor hour a margin of \$4 is earned. To be equally profitable, this must stay the same for alternative products.

Materials	\$5
Labor	\$13.50 (=1.5 hours)
Margin	\$6 (=1.5*\$4)
Sales price	\$24.50

Fixed costs play no part in this analysis.