

## Answers to the midterm exam\_ADM3346B\_2012Fall

### Question 1 (6)

**Solution:** 1.

Rental Cost	\$600
Adm. & Mkt.	900
Band Expense	<u>400</u>
Fixed Cost	<u>\$1,900</u>

\$ per ticket \$40.00

Catering 15.00

Cont. Margin \$25.00

Break-even point = total fixed cost / contribution margin

Opt. 1 :  $\$1,900 / \$25 = 76$  tickets

2. Fixed cost =  $1080 + 900 + 400 = \$2380$

$\$40X - \$12X - \$2,380 = \text{OI}$

$\$40(250) - \$12(250) - \$2,380 = \text{OI}$

$\text{OI} = \$10,000 - \$3,000 - \$2,380 = \$4,620$

### Question 2 (7)

**Solution:**

1. BI + Total costs incurred = Transferred out to FG inventory + EI

Job No. 83 is the only job in EI

Assigned costs to Job No.83 = BI + Total costs incurred - Transferred out to FG inventory  
 $= 10,000 + (60,000 + 40,000 + 32,000) - 120,000 = \$22,000$

2. Overhead costs for Job No. 83 =  $80\% * \text{DL} = 80\% * \$5,000 = \$4,000$

DL =  $\$5,000$

DM of Job No. 83 = Total incurred costs for Job No. 23 – OH – DL  
 $= 22,000 - 4,000 - 5,000 = \$13,000$

### Question 3 (16)

**Solution:**

1. Budgeted manufacturing overhead rate = Budgeted overhead/ budgeted volume of DL hours  
 $= 300,000 / 100,000 = \$3/\text{hour}$

Overhead applied =  $3 * 110,000 = \$330,000$  > actual overhead costs (\$325,000)

Overapplied =  $330,000 - 325,000 = \$5,000$

<i>Account</i>	<i>Dec. 31 Balance (Before Proration) (1)</i>	<i>Balance as a Percent of Total (2) = (1) ÷ \$850,000</i>	<i>Proration of \$5,000 Overallocated Manuf. Overhead (3) = (2) × \$5,000</i>	<i>Dec. 31, 2011 Balance (After Proration) (4) = (1) – (3)</i>
<i>WIP</i>	\$50,000	1.0588	\$294	\$49,706
<i>FG</i>	240,000	1.2824	1,412	238,588
<i>COGS</i>	560,000	1.6588	3,294	556,706
<i>Total</i>	\$850,000	1.000	\$5,000	\$845,000

2. Journal Entries: 2

Manufacturing Overhead Applied	\$5,000	
Ending Work in Process Inventory		\$ 294
Ending Finish Goods Inventory		1,412
Cost of Goods Sold		3,294

3. No. 1

The overallocation is not material, which is less than 2% of OH = 5,000/325,000 1  
Write-off to COGS approach or Adjusted allocation rate approach. 1 (either one)

(either one of the following approaches)

Write-off to COGS approach: under this approach, the total under- or over-allocated manufacturing overhead is included in this year's Cost of Goods Sold. 1

Or Adjusted allocation-rate approach: to restart all overhead entries in the general ledger and subsidiary ledgers using actual cost rates rather than budgeted cost rates. 1

## Question 4 (8)

### Solution:

1.	Large Customers	Medium Customers	Small Customers
Average sale	\$6,000	\$2,000	\$1,200
Commission rate	$\times 0.10$	$\times 0.07$	$\times 0.05$
Average commission	\$600	\$140	\$60
Hours per customer	$\div 6$	$\div 4$	$\div 3$
Commission per hour	<u>\$100</u> 1	<u>\$35</u> 1	<u>\$20</u> 1

First, the firm should service all the large customers because they provide the most commissions per hour.

20 large customers  $\times$  6 hours = 120 hours

This leaves 52 hours (172 - 120) for the next best group, the medium customers.

52 hours / 4 hours = 13 Medium customers

2.

Total commissions:

Large customers $20 \times \$600$	\$12,000
Medium customers $13 \times \$140$	1,820
Total	<u>\$13,820</u>

## Question 5 (14)

Solution:

1.  $t$  Statistics of # of salesperson = Coefficients/Standard Error =  $0.01/0.0007 = 14.29$
2. a) Sales volume
  - Adj  $R^2$  is 51%, above 30% guideline
  - “ $t$ ” value for FC is 2.19 lightly above rough guideline of 2.00, indicating margin significance
  - “ $t$ ” value for VC is 14.13 well above rough guideline of 2.00, indicating significance
  - DW statistic = 1.15 < 2, indicating residuals significantly correlated to dependent variable. There may be other factors impact department costs.
- b) Sales volume **and** number of salesperson
  - Adj  $R^2$  is 86 % which is much higher than 30% and increased comparing to model (a)
  - “ $t$ ” value for FC is 2.47 above guideline of 2.00, indicating significance
  - “ $t$ ” values for two VC are significant
  - DW statistic = 2.89 > 2, indicating residuals are not correlated to dependent variable.
3. model b) is better to be used for the marketing department costs.
  - Better model – additional variable adds value to explanation or prediction power
  - Correlation between the Xs is not a problem  $0.43 < 0.70$
4. Total costs =  $184.26 + 0.12$  Sales volume +  $0.01$  number of salespersons

## Question 6 (14)

Solution:

1. Manufacturing overhead cost driver rates:
  - Setup activity is  $\$1,000/\text{setup} = \$500,000/500$  setups.
  - Machine-related activity is  $\$77.50/\text{machine hour} = \$46,500,000/600,000$  machine hours.
  - Packing activity is  $\$20/\text{shipment} = \$5,000,000/250,000$  shipments.
2. Overhead costs per unit:
  - Deluxe-entry door is \$493 per unit
  - =  $[(\$1,000 \times 400) + (\$77.50 \times 300,000) + (\$20 \times 50,000)] / 50,000$  units

Standard-entry door is \$68.38 per unit

$$= [(\$1,000 \times 100) + (\$77.5 \times 300,000) + (\$20 \times 200,000)] / 400,000 \text{ units.}$$

Manufacturing cost per unit for the deluxe-entry door is \$673 = \$180.00 + \$493

Manufacturing cost per unit for the standard-entry door is \$198.38 = \$130.00 + \$68.38

3. No, the deluxe door is not as profitable as originally estimated because the deluxe door requires a disproportionate share of the overhead activities (the robotics system) and thus, more of the overhead costs are assigned to the deluxe door when using an ABC system.

Traditional method:

$$\text{Unit operating income of Deluxe-entry door} = 650 - (180 + 80) = \$390$$

$$\text{Unit operating income of standard-entry door} = 475 - (130 + 120) = \$225$$

ABC method:

$$\text{Unit operating income of Deluxe-entry door} = 650 - 673 = -\$23$$

$$\text{Unit operating income of standard-entry door} = 475 - 198.38 = \$276.62$$

4. for each suggestion. (total 2)

The ABC system better captures the resources needed for producing Deluxe-entry door.

Suggestions:

- Based on the ABC system to make better pricing for Deluxe. For example, it might decide to increase the prices charged for Deluxe if competitors are not underbidding.
- Make better product mix decisions.
- Reduce costs by eliminating processes and activities that do not add value by identifying and evaluating value-added or non-value-added activities.