

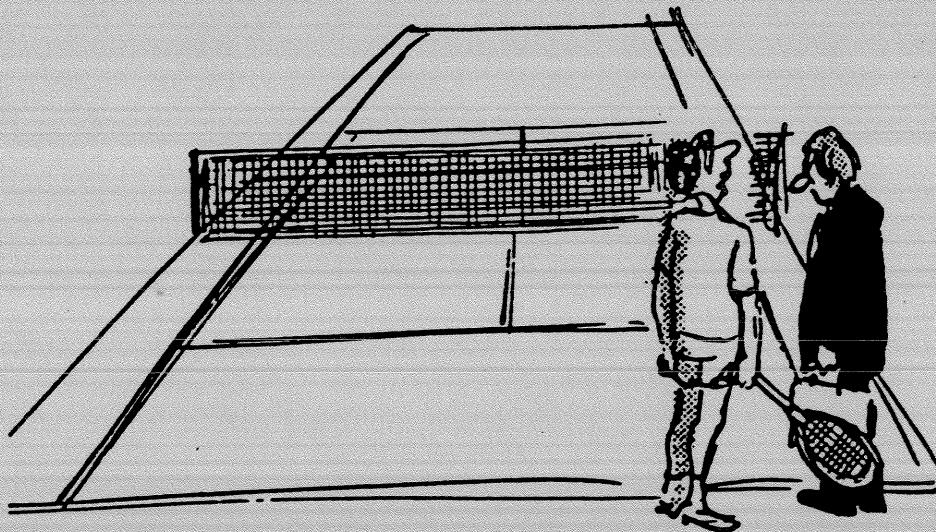
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ACCT 2102
EXAM 1
Spring 2014
(100 pts.)

Instructions:

1. This exam is open book, open notes. Sharing of materials is not permitted. The only electronic device permitted is the calculator that will be supplied.
2. You must show all work to receive any credit.
3. If you feel a problem is unclear, you may state your assumption in writing and give the best answer you can.
4. Make sure you have a cover sheet plus 7 numbered pages.



"Actually, we call it the 'base line,' not the 'bottom line.'"

I. (8 pts.)

The following information pertains to Fifth Dimension Company:

Beginning direct materials	\$20,900
Beginning finished goods	32,000
Beginning work in process	21,200
Selling & administrative expenses	17,000
Gross profit	42,000
Cost of goods manufactured	328,000
Factory overhead	?
Direct labor	?
Direct materials purchases	124,100
Ending direct materials	24,800
Ending work in process	16,500
Ending finished goods	40,000

1) [4 pts.] Manufacturing costs incurred = 323,300

$$\begin{aligned} X + 21,200 - 16,500 &= 328K \\ X = 328K + 16,500 - 21,200 &= 323,300 \end{aligned}$$

3) [4 pts.] Direct materials used = 120,200

$$20,900 + 124,100 - 24,800 = 120,200$$

II. (4 pts.)

Jefferson Airplane Mfg. incurred the following costs during April:

Direct materials	\$14,000	
Direct labor	17,000	
Other costs:		
Manufacturing	Variable	Fixed
Marketing	\$18,000	\$12,000
Administrative	3,000	11,000
	7,000	6,000

The amount classified as *product* costs would be \$ 61,000

$$14K + 17K + 18K + 12K = \uparrow$$

III. (7 pts.)

Alice Cooper's Appliance Service sells three product lines. Data are as follows:

Product Line	Selling Price	Variable Cost	<u>CM</u>
A	\$25	—	\$20
B	40	—	25
C	20	—	10

It is estimated that 30% of total sales volume will be for Product A, 30% for Product B, and 40% for Product C. Fixed costs for the year are expected to be \$200,000. The budgeted after-tax profit is \$300,000. The tax rate is 40%.

How many units of each product line must be sold to earn the budgeted after-tax profit?

$$A: \underline{21,000} \quad B: \underline{21,000} \quad C: \underline{28,000}$$

$$\begin{aligned} & (5A + 15B + 10C - 200k)(1-.4) = 300k \\ & 5(.75C) + 15(.75C) + 10C = \frac{300k}{.6} \\ & 3.75C + 11.25C + 10C = 700k \\ & 25C = 700k \\ & C = 28k \\ & A = B = .75(28k) = 21k \\ & A = B = .3(70k) = 21k \\ & C = .4(70k) = 28k \end{aligned}$$

IV. (5 pts.)

Mekel Enterprises uses the scattergraph and visual fit approach to estimate its overhead costs. After plotting the data for the last 13 months, a cost function was drawn and it hit the vertical axis at \$77,000. A point corresponding to \$95,000 and 250 hours of activity has been picked on the cost function. What amount of overhead cost would be predicted for 375 hours of activity? \$ 104,000

$$VC = 95K - 77K = 18K$$

$$VC/hrc. = \frac{18K}{250} = 72$$

$$Y = 77K + 72(375) = 77K + 27K = 104K$$

V. (6 pts.)

Steve Zuckerman, warden of Adelia County Prison, is concerned about rising meal-related costs at the prison. These costs include food, as well as labor and overhead related to the meal preparation. Mr. Zuckerman has obtained the following data for the last eight months of the year:

<u>Month</u>	<u>Meal Costs</u>	<u>Number of Prisoners</u>
May	\$26,960	25
June	29,520	28
July	33,850	32
August	31,425	30
September	30,760	30
October	28,930	27
November	25,820	23
December	28,980	28

Use the high-low method to predict the meal costs for the next month when it is anticipated that there will be 29 prisoners: \$ 31,174

$$b = \frac{33,850 - 25,820}{32 - 23} = \frac{8030}{9} = 892$$

$$a = 33,850 - 32(892) = 5306 \quad OR \quad a = 25,820 - 23(892) = 5304$$

$$y = 5306 + 892(29) = 31,174$$

VI. (4 pts.)

Dacoby, Inc. is a management consulting firm. Its billing rate to clients is \$120 per hour and variable costs average \$80 per hour. Fixed costs are \$24,000 per month. Income taxes are 20%. If Dacoby desires a monthly income of \$6,000 *after* taxes, how many hours must be billed monthly? 787.5

$$X = \frac{24K + \frac{6K}{1-.2}}{120 - 80} = \frac{24K + 7500}{40} = \frac{31,500}{40} = 787.5$$

VII. (7 pts.)

Adams Company is attempting to determine costs associated with various jobs. Current production records show the following information for three recent jobs:

	Job 101	Job 102	Job 103
Direct materials costs	\$12,000	\$16,000	\$24,000
Direct labor costs:			
Machining Dept.	\$3,000	\$5,000	\$4,000
Fabrication Dept.	\$8,000	\$1,000	\$2,000
Machine hrs. used in Machining	300	600	800
Units completed	200	300	100

Assume overhead application rates of \$14 per machine hour for the Machining Department and 200% of direct labor costs for the Fabrication Department.

What is the total cost of Job 103? \$ 45,200

$$\begin{aligned}
 & 24K + (4K + 2K) + [800(14) + 2K(2)] \\
 & = 24K + 6K + (11,200 + 4K) \\
 & = 24K + 6K + 15,200 \\
 & = 45,200
 \end{aligned}$$

VIII. (5 pts.)

The April Work in Process account contained the following:

Beginning balance -- \$19,000 debit
 Direct materials -- \$11,000 debit
 Direct labor -- \$8,000 debit
 Overhead -- \$13,000 debit
 Transfer to finished goods -- \$3,000 credit

Overhead is applied at a rate of 125% of direct labor cost. The only job in process at April 30, Job #897, has been charged with direct labor cost of \$4,000.

What amount of direct materials cost has been charged to Job #897? \$ 39,000

$$\text{WIP ending bal.} = 19K + 11K + 8K + 13K - 3K = 48K$$

$$48K = DM + 4K + 1.25(4K)$$

$$48K = DM + 9K$$

$$DM = 48K - 9K = 39K$$

IX. (4 pts.)

The following information pertains to Judyank Corporation:

Budgeted overhead cost = \$82,000

Underapplied overhead = \$6,860

Budgeted activity = 5,000 hours

Actual overhead cost = \$70,000

Determine the actual activity: 3850 hours

$$6860 = 70K - \text{Applied OH}$$

$$\text{Applied OH} = 70K - 6860 = 63,140$$

$$63,140 = \left(\frac{82K}{5K}\right)(X)$$

$$63,140 = 16.4X$$

$$X = \frac{63,140}{16.4} = 3850$$

X. (4 pts.) The following data is given for McDowell Co.:

	Planned Costs and Hours	Actual Costs and Hours
Direct materials costs	\$100,000	\$150,000
Direct labor costs	\$120,000	\$160,000
Factory overhead costs	\$80,000	\$100,000
Direct labor hours	15,000	17,000

Factory overhead is applied on the basis of direct labor hours. Compute the over(under)applied overhead: \$ 9,333 overapplied, underapplied (circle one)

$$\text{Applied OH} = \frac{80K}{15K} \times 17K = 90,667$$

$$90,667 - 100,000 = 9333 \text{ underapplied}$$

XI. (4 pts.)

The plant manager requested information to assist in estimating maintenance costs.

The following partial computer printout was generated using the least-squares method:

Constant	5,100
X coefficient	3.7
r-square	0.56

The activity variable is units of production volume. Estimate maintenance costs if expected production for the next month is 20,000 units \$ 79,100

$$Y = 5100 + 3.7(20K) = 5100 + 74,000$$

$$= 79,100$$

XII. (5 pts.)

Data for Weissmann Enterprises are as follows:

Variable cost per unit
Selling price per unit

\$29
\$61

$$CM\% = \frac{61-29}{61} = \frac{32}{61} = .525$$

The fixed costs for the year total \$444,000. The income tax rate is 41 percent. The expected sales volume for the year is 28,000 units.

Determine the margin of safety (in dollars): \$ 862,286

$$BE \text{ Sales} = \frac{444K}{.525} = 845,714$$

$$MS (\$) = 61(28K) - 845,714 = 1,708,000 - 845,714 \\ = 862,286$$

XIII. (10 pts.)

Classify the following costs incurred by a steel railing manufacturing company as:

(1) direct materials, (2) direct labor, (3) factory overhead, or (4) period costs.

- a. Wages paid to production workers
- b. Utilities in the office
- c. Depreciation on machinery in the plant
- d. Steel
- e. President's salary
- f. Factory supplies
- g. Rent on office equipment
- h. Maintenance workers' wages
- i. Utilities in the plant
- j. Maintenance on office equipment

- direct labor (2)
- period costs (4)
- factory overhead (3)
- direct materials (1)
- period costs (4)
- factory overhead (3)
- period costs (4)
- factory overhead (3)
- factory overhead (3)
- period costs (4)

XIV. (27 pts.) -- Multiple Choice: Circle the one best answer for each question.

1.) Indirect materials are part of:

- a. prime costs
- b. factory overhead costs
- c. traceable costs
- d. both (a) and (b)
- e. both (b) and (c)

2). In general, any cost incurred in the office area (as opposed to the factory) is a:

- a. period cost
- b. product cost
- c. controllable cost
- d. variable cost
- e. relevant cost

- 3.) Which of the following statements is true?
- As selling price increases, the break-even point increases.
 - As fixed costs increase, the break-even point decreases.
 - As the variable cost per unit increases, the break-even point increases.
 - One of the assumptions of break-even analysis is that of a non-linear cost function.
 - The contribution margin ratio is zero when there are no fixed costs.
- 4). The operating leverage factor:
- is the reciprocal of the margin of safety percentage.
 - is the reciprocal of the contribution margin ratio.
 - can never be more than one.
 - equals zero when there are no fixed costs.
 - Both (b) and (c) are correct.
- 5.) Which of the following costs are included in work in process?
- Advertising
 - Direct labor
 - Bad debt expense
 - Depreciation – office building
 - None of the above
- 6.) If the factory overhead account has a credit balance of \$1,000, then:
- Factory overhead is overapplied
 - Factory overhead is underapplied
 - \$1,000 will be added to cost of goods sold
 - \$1,000 will be added to finished goods
 - \$1,000 will be added to work in process
- 7.) Normal costing differs from actual costing in that:
- Overhead is allocated using an actual overhead rate.
 - Direct materials are allocated using a predetermined rate.
 - Direct labor is allocated using a predetermined rate.
 - Overhead is allocated using a predetermined rate.
 - None of the above is correct.
- 8.) The maximum amount of product that can be manufactured or service rendered with existing facilities is known as:
- Expected volume
 - Practical capacity
 - Normal volume
 - Limited capacity
 - Ideal capacity
- 9.) The following method(s) involves classifying a list of items as fixed or variable:
- Account analysis
 - Scattergraph and visual fit
 - High-Low method
 - Regression analysis
 - Both (b) and (c)