MIDTERM EXAM
AFM 102: Introduction to Managerial Accounting
Sections 001, 002, 003 and 005
February 27, 2009: 4:30 – 6:00 PM
Instructors: Robert Ducharme; Thomas Vance; Yutao Li

STUDENT NAME:_____________________________________

STUDENT ID:____

UWDIR/Quest Id:_____________________________________

LECTURE: (select one)

______6:00-8:50 T (001) Ducharme

______8:30-9:20 MWF (002) Vance

______10:30-11:20 MWF (003) Vance

______11:30-12:20 MWF (005) Li

TUTORIAL: (select one)
Room: PAS 1229
______8:30-9:20 F (101)
______9:30-10:20 F (102)
______10:30-11:20 F (103)
______11:30-12:20 F (104)
Room: AL 208
______12:30-1:20 F (105)
______1:30-2:20 F (106)
______2:30-3:20 F (107)
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- **Clearly label your solutions to each part of Questions 2-5 to facilitate accurate marking.**

MARKS (Awarded / Possible)

Q1:	________	**/ 42**
Q2:	________	**/ 9**
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TOT:	________	**/ 80**

Q1.

ANSWER MULTIPLE CHOICE QUESTIONS ON THE SCANTRON SHEET

One mark per question, unless preceded by '', then two marks.**

1. Identifying alternatives and selecting the best among them is part of which of the following activities which managers carry on in organizations?
   A) Controlling.
   B) Directing.
   C) Planning.
   D) Motivating.

2. How would the insurance premium on Research In Motion's manufacturing plants generally be classified?

	Prime cost	Product cost
A)	No	Yes
B)	No	No
C)	Yes	No
D)	Yes	Yes

3. Which one of the following statements is true about job-order costing?
   A) Job-order costing is used in manufacturing companies and process costing is used in service firms.
   B) In a job-order costing system, costs are traced to departments and then allocated to units of product using an averaging process.
   C) Job-order costing is more likely to be used than process costing in situations where many different products or services are produced each period to customer specifications.
   D) In a Job-order costing, there is no need to keep separate records for each job.

4. Which one of the following statements is true about activity-based costing and traditional costing system?
   A) In the activity-based costing, as in traditional costing systems, non-manufacturing costs are not assigned to products.
   B) When there are batch-level or product-level costs, in comparison to a traditional cost system, an activity-based costing system ordinarily will shift costs from high-volume to low-volume products.
   C) ABC is typically used as a replacement for a company's traditional costing system.
   D) The first-stage allocation in activity-based costing is the process by which overhead costs are assigned to products before they are assigned to customers.

5. Expense A is a fixed cost; expense B is a variable cost. During the current year, the activity level has increased but is still within the relevant range. In terms of cost per unit of activity, you would expect which of the following statements to be true?
   A) Expense A has remained unchanged.
   B) Expense B has decreased.
   C) Expense A has decreased.
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6. Once the break-even point is reached, which of the following statements is true?
   A) The total contribution margin changes from negative to positive.
   B) Operating income will increase by the unit contribution margin for each additional item sold.
   C) Variable expenses will remain constant in total.
   D) The contribution margin ratio begins to decrease.

7. What is the costing method that can be used most easily with break-even analysis and other cost-volume-profit techniques?
   A) Variable costing.
   B) Absorption costing.
   C) Process costing.
   D) Job-order costing.

8. Which of the following best describes the function of managerial accounting within an organization?
   A) It has its primary emphasis on the future.
   B) It is required by regulatory bodies such as the Ontario Securities Commission.
   C) It focuses on the organization as a whole, rather than on the organization's segments.
   D) It places more emphasis on precision of data than financial accounting does.

9. Which one of the following statements about opportunity costs is true?
   A) Opportunity costs are costs that have already been incurred and cannot be changed now or in the future.
   B) Opportunity costs do not appear on the accounting records of an organization.
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**10. Worrell Corporation has a job-order costing system. The following debits (credits) appeared in the Work in Process account for the month of March:

March 1, balance	$12,000
March 31st, direct materials	40,000
March 31st, direct labour	30,000
March 31, manufacturing overhead applied	27,000
March 31, to finished goods	(100,000)

Worrell applies overhead at a predetermined rate of 90% of direct labour cost. Job No. 232, the only job still in process at the end of March, has been charged with manufacturing overhead of $2,250. What was the amount of direct materials charged to Job No. 232?

A) $2,250.
B) $2,500.
C) $4,250.
D) $9,000.

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A) A simple count of the number of times an activity occurs.
B) An activity measure that is used for the life of the company.
C) A measure of the amount of time required to perform an activity.
D) An activity measure that is used for the life of an activity-based costing system.

**12. Wilson Company's activity for the first six months of the current year is as follows:

	Machine Hours	Electrical Cost
January	2,000	$1,560
February	3,000	$2,200
March	2,400	$1,750
April	1,900	$1,430
May	1,800	$1,480
June	2,100	$1,600

Using the high-low method, what is the fixed portion of the electrical cost each month?

A) $100.
B) $280.
C) $400.
D) $760.

**13. Lindsay Company reported the following results from sales of 5,000 units for the month of June:

Sales	$200,000
Variable Expenses	$120,000
Fixed Expenses	$ 60,000

Assume that Lindsay increases the selling price of the product by 10% on July 1. How many units would have to be sold in July in order to generate an operating income of $20,000?

A) 4,000 units.
B) 4,300 units.
C) 4,500 units.
D) 5,000 units.

14. What does manufacturing overhead cost consist of?

A) All manufacturing costs.
B) All manufacturing costs, EXCEPT direct materials and direct labour.
C) Indirect materials but NOT indirect labour.
D) Indirect labour but NOT indirect materials.

**15. Last year, Black Company reported sales of $640,000, a contribution margin of $160,000, and an operating loss of $40,000. Based on this information, what was the break-even point?

A) $640,000.
B) $480,000.
C) $800,000.
D) $960,000.

**16. The following monthly data are available for the Eager Company and its only product:

Unit Sales Price	$75
Unit Variable Expenses	$30
Total Fixed Expenses	$180,000
Actual Sales for the Month of March	7,000 units

What was the margin of safety for the company for March?

A) $315,000.
B) $225,000.
C) $135,000.
D) $495,000.

17. Samantha Galloway is a managerial accountant in the accounting department of Mustang Industries, Inc. Samantha has just discovered evidence that some of the corporation's marketing managers have been wrongfully inflating their expense reports in order to obtain higher reimbursements from the firm. According to the Institute of Management Accountants' Standards of Ethical Conduct, what should Samantha do upon discovering this evidence?
   A) Notify the controller.
   B) Notify the marketing managers involved.
   C) Notify the president of the corporation.
   D) Ignore the evidence because she is not part of the Marketing Department.

**18. During the month of May, Bennett Manufacturing Company purchases $43,000 of raw materials. The manufacturing overhead totals $27,000 and the total manufacturing costs are $106,000. Assuming a beginning inventory of raw materials of $8,000 and an ending inventory of raw materials of $6,000, what must be the total for direct labour?
   A) $34,000.
   B) $38,000.
   C) $36,000.
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19. West Co.'s manufacturing costs are as follows:

Direct materials and direct labour	$700,000
Other variable manufacturing costs	100,000
Depreciation of factory building and manufacturing equipment	80,000
Other fixed manufacturing overhead	18,000

   What amount should be considered product costs for external reporting purposes if the company uses absorption costing?
   A) $700,000.
   B) $800,000.
   C) $880,000.
   D) $898,000.

20. Which of the following facets of the lean thinking model is often called just-in-time production?
   A) Identify value in specific products/services
   B) Identify the business process that delivers value
   C) Create a pull system that responds to customer orders
   D) Organize work arrangements around the flow of the business process

Use the following to answer questions 21-22:

Fletcher Company has three products with the following characteristics:

	Product A	Product B	Product C
Monthly Sales in Dollars	$60,000	$80,000	$100,000
Contribution Margin Ratio	20%	40%	16%

**21. What is the overall contribution margin ratio for the company as a whole, rounded to the nearest tenth of a percent?
A) 25.3%.
B) 75.0%.
C) 25.0%.
D) 28.5%.

22. If total units sold remain unchanged, but the sales mix shifts more heavily toward Product C, what would the overall contribution margin ratio be expected to do?
A) Increase.
B) Decrease.
C) Remain unchanged.
D) The effect cannot be predicted without additional information.

23. Which of the following concepts used in estimating cost behaviour is unique to the least-squares regression method?
A) Independent variable.
B) Dependent variable.
C) R-squared.
D) Variable cost per unit.

24. Which of the following types of information contained in a business plan is LEAST likely to be found in the accounting records of a typical company?
A) Financial
B) Competitors
C) Internal
D) Non-financial

**25. Company Y is considering two production technologies, Bronze and Platinum, for producing its new product. The cost structures of the two technologies are as follows:

	Bronze	Platinum
Selling Price per Unit	$ 150	$ 150
Variable Production Costs per Unit	$ 120	$ 50
Total Fixed Production Costs	$300,000	$1,210,000

At what level of sales volume in units (rounded to the nearest whole unit) would Company Y be indifferent in choosing between the Bronze and Platinum technologies?

A) 10,000 units.
B) 12,100 units.
C) 13,000 units.
D) Cannot be determined without additional information.

26. What is the outcome if the cost of goods sold is greater than the cost of goods manufactured?

A) Work-in-process inventory has decreased during the period.
B) Finished goods inventory has increased during the period.
C) Total manufacturing costs must be greater than cost of goods manufactured.
D) Finished goods inventory has decreased during the period.

27. A manufacturing company prepays its insurance coverage for a three-year period. The premium for the three years is $2,700 and is paid at the beginning of the first year. Eighty percent of the premium applies to manufacturing operations and 20% applies to selling and administrative activities. What amounts should be considered product costs and period costs respectively for the first year of coverage?

	Product Costs	Period Costs
A)	$2,700	$ 0
B)	$2,160	$ 540
C)	$1,440	$ 360
D)	$720	$ 180

28. What are discretionary fixed costs?

A) They vary directly and proportionately with the level of activity.
B) They have a long-term planning horizon, generally encompassing many years.
C) They are made up of plant, equipment, and basic organizational costs.
D) None of these options.

29. Which of the following statements about the treatment of overhead costs in a normal job-order costing system is true?
   A) Actual overhead costs are not charged to jobs
   B) Actual overhead costs do not appear on the job cost sheet nor do they appear in the work in process account
   C) Only the applied overhead cost, based on the predetermined overhead rate, appears on the job cost sheet and in the work in process account.
   D) All of the above

30. Which of the following is NOT a limitation of activity-based costing?
   A) Maintaining an activity-based costing system is more costly than maintaining a traditional direct labour-based costing system.
   B) Changing from a traditional direct labour-based costing system to an activity-based costing system changes product margins and other key performance indicators used by managers. Such changes are often resisted by managers.
   C) In practice, most managers insist on fully allocating all costs to products, customers, and other costing objects in an activity-based costing system. This results in overstated costs.
   D) More accurate product costs may result in increasing the selling prices of some products.

**31. Green Company's variable expenses are 60% of sales. At a sales level of $400,000, the company's degree of operating leverage is 4. At this sales level, fixed expenses equal which of the following?
A) $180,000.
B) $100,000.
C) $120,000.
D) $ 75,000.

**32. More Company has two divisions: L and M. During July, the contribution margin in Division L was $60,000. The contribution margin ratio in Division M was 40%, and its sales were $250,000. Division M's segment margin was $60,000. The common fixed expenses were $50,000, and the company net income was $20,000. What was the segment margin for Division L?
   A) $ 0.
   B) $10,000.
   C) $50,000.
   D) $60,000.

End of multiple choice questions.

Q2. (9 marks)

Picard Company used a predetermined overhead rate based on direct labour hours. The estimated annual manufacturing overhead costs and direct labour hours were $150,000 and 20,000, respectively. Actual overhead costs and direct labour hours are $100,000 and 16,000 hours, respectively.

The overhead that had been applied to production during the year us distributed among the ending balances in the accounts as follows:

Work in Process, ending	$12,800
Finished Goods, ending	$21,000
Cost of Goods Sold, ending	$86,200

Required:

a) What was the predetermined manufacturing overhead rate? What was the total manufacturing overhead costs applied during the period?

b) Was manufacturing overhead under or overapplied? Calculate the amount of the under or overapplied overhead?

c) Assume that the amount of under or overapplied manufacturing overhead is immaterial and that the company chooses the simple method of clearing manufacturing overhead to the income statement for the current period. Prepare a summary journal entry to close any under or overapplied manufacturing overhead to be consistent with the company's policy.

Q3. (15 marks)

The Barnett Company manufactures and sells a unique electronic part. The company's plant is highly automated with low variable and high fixed manufacturing costs. Operating results on an absorption costing basis for two years of activity follows:

	Year 12	**Year 13**
Sales	$528,000	$704,000
Costs of goods sold:		
Beginning inventory	$-0-	$220,000
Costs of goods manufactured	550,000	496,000
Goods available for sale	550,000	716,000
Less ending inventory	220,000	186,000
Cost of goods sold	330,000	530,000
Gross margin	198,000	174,000
Less selling and administrative expense	160,000	180,000
Operating Income (loss)	$38,000	$(6,000)
Production (units)	50,000	32,000
Sales (units)	30,000	40,000

Additional information about the company follows:

- Variable manufacturing costs (direct labour, direct materials, and variable manufacturing overhead) total $3 per unit, and fixed manufacturing overhead costs total $400,000.
- Fixed manufacturing costs are applied to units of product on the basis of the number of units produced each year (i.e., a new fixed overhead rate is computed each year).
- The company uses a FIFO inventory flow assumption.
- Variable selling and administrative expenses are $2 per unit sold. Fixed selling and administrative expenses total $100,000.

Required:

a) What is the ***absorption unit product cost*** in year 12 and year 13? Show your work.

b) Provide a ***variable costing*** operating income statement in contribution margin format for year 13.

c) Instead of a FIFO inventory flow, assume LIFO. What would the value of ending inventory be in Year 13 under ***absorption costing***?

Q4. (4 marks)

Davis Company uses an activity-based costing system in which there are three activity cost pools. The company has provided the following data concerning its costs and its activity-based costing system:

Costs:	
Manufacturing Overhead	$400,000
Selling and Administrative Expenses	$200,000
Total	$600,000

Resource Consumption:

	Activity Cost Pools			
	Order Size	Customer Support	Other	Total
Manufacturing Overhead	35%	55%	10%	100%
Selling and Administrative Expenses	50%	30%	20%	100%

The "Other" activity cost pool consists of the costs of idle capacity and organization-sustaining costs.

Required:
How much cost, in total, would be allocated in the first-stage allocation to the Customer Support activity cost pool? Show all calculations.

Q5. (10 marks)

Acton Company has two products: A and B. The annual production and sales of Product A is 800 units and of Product B is 500 units. The company has traditionally used direct labour hours as the basis for applying all manufacturing overhead to products. Product A requires 0.3 direct labour hours per unit, and Product B requires 0.2 direct labour hours per unit. The total estimated overhead for next period is $92,023.

The company is considering switching to an activity-based costing system for the purpose of computing unit product costs for external reports. The new activity-based costing system would have three overhead activity cost pools—Activity 1, Activity 2, and General Factory—with estimated overhead costs and expected activity as follows:

Activity Cost Pool	Estimated Overhead Costs	Expected Activity Product A	Product B	Total
Activity 1	$14,487	500	600	1,100
Activity 2	$64,800	2,500	500	3,000
General Factory	$12,736	240	100	340
Total	$92,023			

(Note: The General Factory activity cost pool's costs are allocated on the basis of direct labour hours.)

a) How much overhead would be allocated to a unit of Product B under the ***traditional*** costing method?

b) What are the overhead allocation rates for each activity under the new ***ABC*** cost system?

c) How much overhead would be allocated to a unit of Product B under the new ***ABC*** cost system?

End of midterm exam.

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B)	No	No
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A) Increase.
B) Decrease.
C) Remain unchanged.
D) The effect cannot be predicted without additional information.

23. Which of the following concepts used in estimating cost behaviour is unique to the least-squares regression method?
A) Independent variable.
B) Dependent variable.
C) R-squared.
D) Variable cost per unit.

24. Which of the following types of information contained in a business plan is LEAST likely to be found in the accounting records of a typical company?
A) Financial
B) Competitors
C) Internal
D) Non-financial

**25. Company Y is considering two production technologies, Bronze and Platinum, for producing its new product. The cost structures of the two technologies are as follows:

	Bronze	Platinum
Selling Price per Unit	$ 150	$ 150
Variable Production Costs per Unit	$ 120	$ 50
Total Fixed Production Costs	$300,000	$1,210,000

At what level of sales volume in units (rounded to the nearest whole unit) would Company Y be indifferent in choosing between the Bronze and Platinum technologies?

A) 10,000 units.
B) 12,100 units.
C) 13,000 units.
D) Cannot be determined without additional information.

26. What is the outcome if the cost of goods sold is greater than the cost of goods manufactured?

A) Work-in-process inventory has decreased during the period.
B) Finished goods inventory has increased during the period.
C) Total manufacturing costs must be greater than cost of goods manufactured.
D) Finished goods inventory has decreased during the period.

27. A manufacturing company prepays its insurance coverage for a three-year period. The premium for the three years is $2,700 and is paid at the beginning of the first year. Eighty percent of the premium applies to manufacturing operations and 20% applies to selling and administrative activities. What amounts should be considered product costs and period costs respectively for the first year of coverage?

	Product Costs	Period Costs
A)	$2,700	$ 0
B)	$2,160	$ 540
C)	$1,440	$ 360
D)	**$720**	**$ 180**

28. What are discretionary fixed costs?

A) They vary directly and proportionately with the level of activity.
B) They have a long-term planning horizon, generally encompassing many years.
C) They are made up of plant, equipment, and basic organizational costs.
D) None of these options.

29. Which of the following statements about the treatment of overhead costs in a normal job-order costing system is true?
   A) Actual overhead costs are not charged to jobs
   B) Actual overhead costs do not appear on the job cost sheet nor do they appear in the work in process account
   C) Only the applied overhead cost, based on the predetermined overhead rate, appears on the job cost sheet and in the work in process account.
   D) All of the above

30. Which of the following is NOT a limitation of activity-based costing?
   A) Maintaining an activity-based costing system is more costly than maintaining a traditional direct labour-based costing system.
   B) Changing from a traditional direct labour-based costing system to an activity-based costing system changes product margins and other key performance indicators used by managers. Such changes are often resisted by managers.
   C) In practice, most managers insist on fully allocating all costs to products, customers, and other costing objects in an activity-based costing system. This results in overstated costs.
   D) More accurate product costs may result in increasing the selling prices of some products.

**31. Green Company's variable expenses are 60% of sales. At a sales level of $400,000, the company's degree of operating leverage is 4. At this sales level, fixed expenses equal which of the following?
A) $180,000.
B) $100,000.
C) $120,000.
D) $ 75,000.

**32. More Company has two divisions: L and M. During July, the contribution margin in Division L was $60,000. The contribution margin ratio in Division M was 40%, and its sales were $250,000. Division M's segment margin was $60,000. The common fixed expenses were $50,000, and the company net income was $20,000. What was the segment margin for Division L?
   A) $ 0.
   B) $10,000.
   C) $50,000.
   D) $60,000.

End of multiple choice questions.

Q2. (9 marks)

Picard Company used a predetermined overhead rate based on direct labour hours. The estimated annual manufacturing overhead costs and direct labour hours were $150,000 and 20,000, respectively. Actual overhead costs and direct labour hours are $100,000 and 16,000 hours, respectively.
The overhead that had been applied to production during the year us distributed among the ending balances in the accounts as follows:

Work in Process, ending	$12,800
Finished Goods, ending	$21,000
Cost of Goods Sold, ending	$86,200

Required:
a) What was the predetermined manufacturing overhead rate? What was the total manufacturing overhead costs applied during the period?

SOLUTION:

Predetermined manufacturing overhead rate = $150,000 (1) / 20,000 DLH (1)
= $7.50 per direct labour hour (DLH)

Applied manufacturing overhead: $ 120,000
= $7.50 (c/f) x 16,000 DLHs (1)

b) Was manufacturing overhead under or overapplied? Calculate the amount of the under or overapplied overhead?

SOLUTION:

Actual manufacturing overhead costs	$ 100,000	(1)
Less: Applied manufacturing overhead costs ($7.50 x 16,000 DLHs)	120,000	(1 c/f)
Overapplied manufacturing overhead costs (1)	$ 20,000	

c) Assume that the amount of under or overapplied manufacturing overhead is immaterial and that the company chooses the simple method of clearing manufacturing overhead to the income statement for the current period. Prepare a summary journal entry to close any under or overapplied manufacturing overhead to be consistent with the company's policy.

SOLUTION:

Manufacturing Overhead (1)	$ 20,000		(1) -> amount c/f from part (b)
Cost of Goods Sold (1)		$ 20,000	

Q3. (15 marks)

The Barnett Company manufactures and sells a unique electronic part. The company's plant is highly automated with low variable and high fixed manufacturing costs. Operating results on an absorption costing basis for two years of activity follows:

	Year 12	**Year 13**
Sales	$528,000	$704,000
Costs of goods sold:		
Beginning inventory	$-0-	$220,000
Costs of goods manufactured	550,000	496,000
Goods available for sale	550,000	716,000
Less ending inventory	220,000	186,000
Cost of goods sold	330,000	530,000
Gross margin	198,000	174,000
Less selling and administrative expense	160,000	180,000
Operating Income (loss)	$38,000	$(6,000)
Production (units)	50,000	32,000
Sales (units)	30,000	40,000

Additional information about the company follows:

- Variable manufacturing costs (direct labour, direct materials, and variable manufacturing overhead) total $3 per unit, and fixed manufacturing overhead costs total $400,000.
- Fixed manufacturing costs are applied to units of product on the basis of the number of units produced each year (i.e., a new fixed overhead rate is computed each year).
- The company uses a FIFO inventory flow assumption.
- Variable selling and administrative expenses are $2 per unit sold. Fixed selling and administrative expenses total $100,000.

Required:

a) What is the ***absorption unit product cost*** in year 12 and year 13? Show your work.

SOLUTION:

	year 12	year 13
beginning inventory (units)	0	20,000
production (units)	50,000	32,000
sales (units)	30,000	40,000
ending inventory (units)	20,000	12,000

		year 12		year 13	
DM,DL,VMOH	(1)	$3.00		$3.00	
FMOH – year 12	(1)	$8.00		-	(=$400,000/50,000 units produced)
– year 13		-	(2)	$12.50	(=$400,000/32,000 units produced)
absorption cost unit product cost		$11.00 (.5) correct unit cost		$15.50 (.5) correct unit cost	

b) Provide a ***variable costing*** operating income statement in contribution margin format for year 13.

SOLUTION:

	Year 13		
Sales	$704,000	(.5)	= 40,000 x $17.60
Less variable expenses:			
Variable cost of goods sold			
Beginning inventory	$60,000		= 20,000 (1) x $3 (1)
Add: manufacturing costs	96,000		= 32,000 (1) x $3
Goods available for sale	156,000		= 52,000 x $3
Less: ending inventory	36,000		= 12,000 (1) x $3
Variable costs of goods sold	120,000		= 40,000 x $3
Variable selling expense	80,000		= 40,000 x $2
Total variable expense	200,000		= 40,000 (1) x $5
Contribution margin	504,000		= 40,000 (1) x $12.60
Less fixed expense:			
Fixed manufacturing overhead	400,000	(.5)	given
Fixed selling and administrative	100,000	(.5)	given
Total fixed expense	500,000		
Operating income (loss)	$4,000	(.5) must be correct	

c) Instead of a FIFO inventory flow, assume LIFO. What would the value of ending inventory be in Year 13 under ***absorption costing***?

SOLUTION:

ending inventory assuming LIFO under AC = 12,000 units x $11.00 = $132,000
(.5) (1.5 c/f)

NOTE: as year 12 began with no inventory, then the LIFO cost flow assumption would dictate that all the year 13 units were sold and that the 12,000 units in ending inventory in year 13 were produced in year 12, at a product cost of $11.00 per unit.

Q4. (4 marks)

Davis Company uses an activity-based costing system in which there are three activity cost pools. The company has provided the following data concerning its costs and its activity-based costing system:

Costs:	
Manufacturing Overhead	$400,000
Selling and Administrative Expenses	$200,000
Total	$600,000

Resource Consumption:

	Activity Cost Pools			
	Order Size	Customer Support	Other	Total
Manufacturing Overhead	35%	55%	10%	100%
Selling and Administrative Expenses	50%	30%	20%	100%

The "Other" activity cost pool consists of the costs of idle capacity and organization-sustaining costs.

Required:
How much cost, in total, would be allocated in the first-stage allocation to the Customer Support activity cost pool? Show all calculations.

SOLUTION:

Resource Consumption:

	Activity Cost Pools			
	Order Size	**Customer Support**	Other	Total
Manufacturing Overhead	$140,000	**(2) $220,000**	$40,000	$400,000
Selling and Administrative Expenses	$100,000	**(1) $60,000**	$40,000	$200,000
Total	$240,000	**(1) $280,000**	$80,000	$600,000
		(must be correct)		

Q5. (10 marks)

Acton Company has two products: A and B. The annual production and sales of Product A is 800 units and of Product B is 500 units. The company has traditionally used direct labour hours as the basis for applying all manufacturing overhead to products. Product A requires 0.3 direct labour hours per unit, and Product B requires 0.2 direct labour hours per unit. The total estimated overhead for next period is $92,023.

The company is considering switching to an activity-based costing system for the purpose of computing unit product costs for external reports. The new activity-based costing system would have three overhead activity cost pools—Activity 1, Activity 2, and General Factory—with estimated overhead costs and expected activity as follows:

Activity Cost Pool	Estimated Overhead Costs	Expected Activity Product A	Product B	Total
Activity 1	$14,487	500	600	1,100
Activity 2	$64,800	2,500	500	3,000
General Factory	$12,736	240	100	340
Total	$92,023			

(Note: The General Factory activity cost pool's costs are allocated on the basis of direct labour hours.)

a) How much overhead would be allocated to a unit of Product B under the ***traditional*** costing method?

SOLUTION:

total estimated DLH for production:
= (800 x 0.3 DLH for product A) + (500 x 0.2 DLH for product B)
= 240 + 100 = 340 DLH

POHR = budgets OH cost / budgeted OH activity level
= $92,023 / 340 DLH = $270.66 per DLH
(1) (1 c/f)

OH allocated to Product B under traditional costing = 0.2 DLH x $270.66 = $54.13
(.5) (1 c/f) (.5)

-- OR --
total OH allocated to product B = $92,023 x 100/340 = $27,065
(award maximum points less 2 point penalty if solution not given on a per unit basis)

b) What are the overhead allocation rates for each activity under the new ***ABC*** cost system?

SOLUTION:

Activity Cost Pool	Estimated Overhead Costs	Expected Activity Product A	Product B	Total	Activity Cost Driver Rate =OH$/Total	
Activity 1	$14,487	500	600	1,100	$13.17	(1)
Activity 2	$64,800	2,500	500	3,000	$21.60	(1)
General Factory	$12,736	240	100	340	$37.45	(1)
Total	$92,023					

c) How much overhead would be allocated to a unit of Product B under the new ***ABC*** cost system?

SOLUTION:

Activity Cost Pool	Estimated Overhead Costs	OH cost based on Expected Activity Product A		Product B
Activity 1	$14,487	$6,585		$7,902
Activity 2	$64,800	$54,000		$10,800
General Factory	$12,736	$8,990		$3,746
Total	$92,023	$69,575	(1)	$22,448
est # units produced		800 units	(1)	500 units
OH allocated per unit			(1)	$44.90

End of midterm exam.