Problem 1. (27 marks) Information pertaining to ABC Firm follows:

	January		February		March	
Units Sold	7,800		15,200		5,900	
Supplies cost	$25,350	3.25	$49,400	3.25	$19,175	3.25
Rent	14,500		14,500		14,500	
Utilities cost	40,080	5.14	59,320	3.90	35,140	5.96

1. Prepare a properly formatted cost function for each cost.

Utilities

$\frac{\Delta \text{cost}}{\Delta \text{units}}$ $\frac{59,320 - 35,140}{15,200 - 5,900} = 2.60/\text{unit}$

$TC = FC + VC$

$59,320 = FC + 2.60 \times 15,200$ $FC = 19,800$

3 Supplies cost = 3.25/unit

2 Rent = $14,500/month

11 Utilities = 2.60 (3) /unit + 19,800 (4) /month

2. Determine total variable cost per unit.

3 Supplies 3.25
Util 2.60
$5.85/unit

3. Determine total fixed cost per month.

3 Rent 14,500
Util 19,800
34,300

Problem 2. (34 marks) Larry and Moe operate a large restaurant in a busy downtown area of a large city. For breakfast and lunch, they generally have a line of customers waiting. Fire codes prevent them from adding additional seating. The contribution format income statement for the most recent week follows:

Sales (4,960 meals served)	$123,008	24.80
VC	63,984	12.90
CM	$59,024	11.90
FC	25,000	
NI	$34,024	

Larry wants to automate the food delivery. There would be no more servers. Orders would be placed electronically on iPads located at each table. Food would arrive via an overhead "railroad". Larry believes that the cost of this system would be $11,200 per week and it would reduce variable costs by $3.00 per person. He thinks that maybe prices could be increased as customers will enjoy the novel environment.

1. Prepare a contribution format income statement using Larry's predictions. Assume the price and the number of meals served stays the same.

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Sales (4,960 meals) 123,008 1
VC (12.90 - 3.00) 49,104 4
CM 73,904 1
FC 36,200 2
37,704 1

2. Compute the price increase that would be required to achieve a target NI of $40,000 per week.

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SP(4,960) − 9.90(4,960) − 36,200 = 40,000

SP = 25.26

Problem 2. (continued)

3. Which way is the firm riskier, as it currently stands or under Larry's suggestion? Provide supporting computations.

	As is	Larry
B/E	$\frac{25,000}{11.90}$ 2,101	$\frac{36,200}{14.90}$ = 2,430
	$52,105	$60,264
DOL	1.73	1.96

Larry greater chance of NI going below zero and greater income volatility

4. Would you recommend implementing Larry's ideas? Why or why not.

Problem 3. (20 marks) Below is some information for the month of September for XYZ Firm.

	Beginning Balance	Ending Balance
Direct Materials	$16,500	$19,300
WIP	35,400	28,500
FG	58,600	77,400

Direct labor	143,000
Indirect labor	54,200 ✓
Sales salaries	33,400
Administrative salaries	456,700
Utilities in factory	16,400 ✓
Depreciation on office equipment	18,400
Depreciation on factory equipment	33,800 ✓
Sales	945,300
Supplies	19,200 ✓
Depreciation on sales peoples' cars	45,900
Purchases of direct materials	62,600
Rent on CEO's office	94,300

Assumption

1. Compute COGM (cost of goods manufactured).

123,600 OR 104,400

DM BB 16,500 1
Purchases 62,600 1
End Bal (19,300) 2
DM used 59,800 1
5

beg WIP 35,400 1
DM used 59,800 1
DL 143,000 1
104,400 OH 123,600 4
End WIP (28,500) 2
314,100 COGM 333,300 1

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2. Which can be classified as more reliable, financial accounting or managerial accounting? Explain your answer.

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Financial, based on historical events according to a set of standard
Managerial is based on estimates and predictions and entails customer

Problem 4. (19 marks) DEF Firm produces several different products. It uses a job costing system and applies overhead on the basis of machine hours. Estimates (made on January 1) and actuals (determined on December 31) for the year of 2015 follow:

	Estimate	Actual
Units produced	9,400	9,523
Units sold	9,500	9,550
Direct labor hours	845,000	865,300
Machine hours	1,540,000	1,623,100
DM Used	$645,000	$723,400
DL	12,560,000	12,965,200
OH	1,367,000	1,395,000

One of the firms most popular products is widgets. They are produced in large production runs of 5,000 units. One production run requires DM of $16,000, DL of $25,400, DL hours of 954 and machine hours of 2,340.

1. Compute the cost of one production run of widgets.

rate $\frac{\text{est OH}}{\text{est MH}}$ $\frac{1,367,000}{1,540,000}$ = .89/MH 4

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DM 16,000 1
DL 25,400 1
OH 2,083 2 .89 x 2.340
43,483 1

2. Compute overhead over or under applied for the year of 2015.

1 Actual OH 1,395,000
3 Applied 1,444,559 .89 x 1,623,100
1 49,559 OVER

5

3. Assuming that the information used is as appropriate and your computations are correct, how precise is the cost for one production run of widgets?

5

OH is not precise - essentially based on estimates and treats a fixed cost as variable - different base yields different amounts