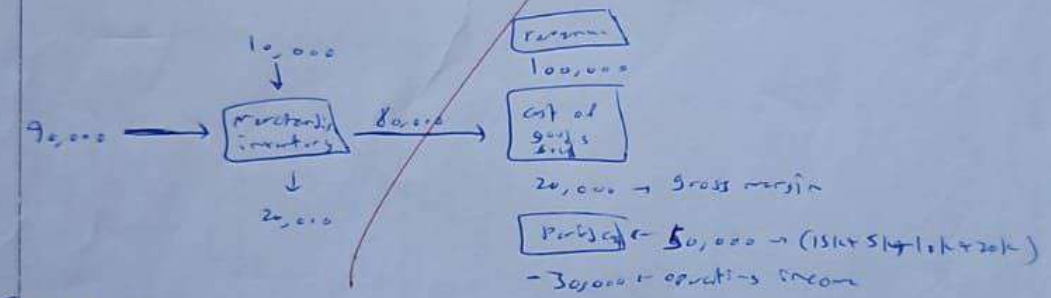
...s). The following data are for ABC department store. Calculate:

Details	Amount	Details	Amount
...erchandise inventory (1/2/2009) ($)	10,000	Purchases ($)	100,000
Merchandise inventory (31/2/2009) ($)	20,000	Transportation-in ($)	5,000
Purchase discounts ($)	5 % of purchases	Purchase returns ($)	10,000
Marketing and customer service costs ($)	₱ 15,000	Utilities costs ($)	₱ 10,000
Shipping of merchandise to customers ($)	₱ 5,000	General and administrative costs ($)	₱ 20,000

Question	Answer	Question	Answer
The inventoriable costs for the year 2009 (1)	90,000 $	The cost of goods sold (3)	80,000 $
The revenues if the gross margin is 20 % of revenues (2)	100,000 $	Operating costs (4)	50,000 $

(1) Merchandise purchases = 100,000 + 5,000 − 10,000 − (100,000 × 5%)
(inventoriable costs) = 90,000 $

(4) Sales costs = 15,000 + 5,000 + 10,000 + 20,000 = 50,000 $ = Operating costs



(3) Cost of goods sold = 90,000 + 10,000 − 20,000 = 80,000 $

(2) Revenue → R − 80,000 = 0.2R → R = 100,000 $

8

Course: Cost Accounting (First Exam 20 %, 13/11/2023)

Q1 (10 pts) Please state whether each of the following statements is True/False then correct the false part:

Statement		Correction
The number of deliveries can be used as the cost object of distribution activities.	✓	Cost driver
A fixed cost remains unchanged in total for a given time period, despite no changes in the related level of total activity or volume.	✓	wide changes
Costs are described as variable or fixed with respect to a particular relevant range.	✓	True
Freight-in costs in the manufacturing sector are charged to period costs.	✗	indirect costs
The cost object is the band of normal activity level or volume in which there is a specific relationship between the level of activity or volume and the cost in question.	✓	relevant range
Factors affecting the classification of a cost as fixed or variable include the materiality of the cost in question.	✗	True
Distribution costs in a merchandise sector are treated as merchandise purchase costs.	✓	Period costs
For a purchasing department, the number of purchases can be used as the relevant range.	✓	cost driver
A cost driver includes a product, a service, a project, a customer, a brand category, or an activity.	✗	True
Service companies have one inventoriable cost.	✓	Merchandizing
Management accounting only measures, analyzes, and reports financial information that helps managers make decisions to fulfill the goals of an organization.	✓	financial and non-financial
Costs of materials used and machining costs are the prime costs when the cost driver is the quantity produced.	✓	True
Employee overtime premium is charged as period cost.	✓	indirect (or fixed)
Traced design costs of a specific product are regarded as indirect manufacturing costs.	✓	direct
Period costs are all costs in the income statement other than gross margin.	✓	Cost of Goods Sold
Inventoriable costs are all costs of a product that are considered expenses in the balance sheet.	✓	assets in the balance sheet
Depreciation costs on mixing machines that change with units of output are considered indirect and fixed costs.	✓	indirect and variable
The costs of maintenance personnel who are paid only for time worked and maintenance increases with increased production are indirect and variable.	✓	True

29.5 30

8.5

-3

pts) The costs (million $) incurred to produce 10,000 units in a metal manufacturing firm which began production ales operations on January 1, 2009, are as follows (**V: stands for variable; F: stands for fixed**):

Description	F ($)	V ($)	Description	F ($)	V ($)
Purchases of raw materials		165,000	Plant energy costs	10,000	
Direct material used costs		100,000	Prime costs		150,000
Gross Margin		20 % revenues	Indirect manufacturing labor costs	10,000	10,000
Depreciation of plant machines	10,000	10,000	Finished-goods inventory ($) Jan 31, 2009		28,000
Distribution costs	10,000	20,000	Finished-goods inventory ($) Jan 1, 2009		8,000

Variable manufacturing costs are variable with respect to units produced. Variable marketing, distribution, and customer-service costs are variable with respect to units sold. The beginning and ending finished goods inventory is carried out at the average unit manufacturing cost. The beginning raw material inventory ($) and the WIP beginning and ending inventories are zeros. **Calculate:**

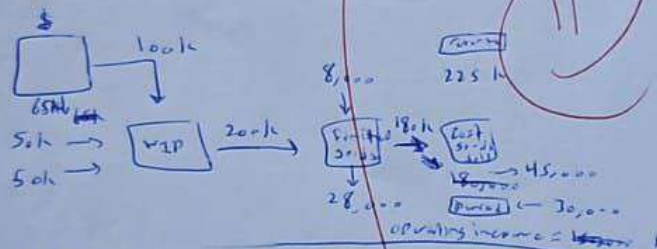
Question	Answer	Question	Answer
(1) The total inventoriable costs for the year 2009	200,000 $	The raw material ending inventory (units) (4)	3250 units
(2) The costs of goods sold	180,000	Cost of goods available for sale (5)	208,000 $
(3) The selling price	25 $	The variable cost per unit sold (6)	19.22 $

direct raw cost = 150,000 − 100,000 = 50,000 $

Indirect raw cost = 10,000 + 10,000 + 10,000 + 10,000 + 10,000 = 50,000 $

direct materials used 100,000 $

(1) inventoriable costs = 50,000 + 50,000 + 100,000 = 200,000



(2) cost of goods sold = 200,000 + 8,000 − 28,000 = 180,000

operating income = 15,000

(5) cost of goods available for sale = 200,000 + 8,000 = 208,000

units cost (cost/unit) = 200,000 / 10,000 = 20 $

(4) raw material ending inv. = 65,000 / 20 = 3250 units

units sold = 180,000 / 20 = 9000 units

(6) variable cost/unit sold

revenue → R − 180,000 = 0.2R

R = 225,000 $

150,000 + 10,000 + 10,000 / 10,000 + 20,000 / 9000 = 19.22 $

(3) selling price = 225,000 / 9000 = 25 $

Q2 (7.5 pts) Carmel Rugs is holding a 2-week carpet sale at Jean's Club, a local warehouse store. Given the following information:

7.5

Description	Amount	Description	Amount
Selling price	$ 30	Sales commission as % revenues	5%
Variable cost of goods sold	$ 21	Income tax rate	25 %
Fixed manufacturing costs ~	$ 1,200,000		
Fixed marketing costs	$ 300,000		

Please calculate:

1. Quantity sold to breakeven = ~~200,000~~ units

S = 30 CMU = 30 - 21 = 7.5

VC = 21 + 30(5%) = 22.5$

FC = 1,500,000

Breakeven units = $\frac{1,500,000}{7.5}$ = 200,000 units

2. Quantity sold to achieve a **net income** of $450,000 = ~~280,000~~ units

~~450,000~~ OI = $\frac{450,000}{(1-25\%)}$ = 600,000$

~~target~~ target units = $\frac{1,500,000 + 600,000}{7.5}$ = 280,000 units

3. If the contribution margin per unit increases by 10%, the quantity sold to achieve a **target operating income** of $600,000 = 254,546 units (rounded up)

CMU = 7.5

CMU (new) = 7.5(1.1) = 8.25

target Q = $\frac{1,500,000 + 600,000}{8.25}$ = 254,545.45 ≈ 254,546 units (rounded up)

4. If the selling price is increased to $32.50, the contribution margin percentage = ~~30.38%~~

~~S~~ S = 32.5$

VC = 21 + 32.5(5%) = 22.625

CMU = 9.875

CM % = $\frac{9.875}{32.5}$ = 0.3038 = 30.38 %

5. The variable cost per unit increases by $2.00 and saving 50% of fixed manufacturing costs, the breakeven revenues = ~~4,909,090,909~~ $

S = 30

VC = 21 + 30(5%) + 2 = 24.5

CMU = 5.5 $ CM % = $\frac{5.5}{30}$

FC = 1,200,000(0.5) + 300,000 = 900,000 $

~~Breakeven units~~ $\frac{900,000}{5.5}$ = 163,636.36 ≈ 163,637 (rounded up)

CM % = $\frac{5.5}{30} = \frac{11}{60}$

2 Breakeven revenue = $\frac{900,000}{11/60}$ = 4,909,090.909

4,909,090,909

Cost Accounting (Midterm Exam 30 %, 11/12/2023) ID: ----------

Q1 (7.5 pts) Please circle the correct answer:

- Examples of ----- include a product, a service, a brand category, an activity, and a department.
  (a) cost objects (b) cost drivers (c) contribution margin (d) cost assignment
- ------ is a general term that encompasses the assignment of both direct costs and indirect costs to a cost object.
  (a) cost objects (b) operating leverage (c) direct costs (d) cost assignment
- Managers believe that --------- that are traced to a particular cost object are more accurately assigned to that cost object than are allocated costs.
  (a) cost objects (b) indirect costs (c) direct costs (d) volume-cost-profit analysis
- Indirect costs are ------- to a cost object.
  (a) cost assignment (b) allocated (c) traced (d) actual costs
- A ----- is computed by dividing some amount of total costs by the related number of units.
  (a) contribution margin (b) gross margin (c) indirect cost (d) unit cost
- ------- companies purchase and then sell tangible products without changing their basic form, for example retailing or distribution.
  (a) Merchandising-sector (b) Manufacturing-sector (c) service (d) profit analysis
- -------- are all manufacturing costs other than direct material costs.
  (a) sales mix (b) period costs (c) conversion costs (d) Operating income
- --- is total revenues from operations for the accounting period minus cost of goods sold and operating costs (excluding income taxes).
  (a) contribution margin (b) period costs (c) net income (d) Operating income
- -------- is the difference between total revenues and total variable costs.
  (a) contribution margin (b) operating leverage (c) net income (d) Operating income
- An increase in the income tax rate does not affect the ---------.
  (a) contribution margin per unit (b) operating leverage (c) net income (d) breakeven point
- --------- describes the effects that fixed costs have on changes in operating income as changes occur in units sold, and hence, in contribution margin.
  (a) Gross margin (b) operating leverage (c) net income (d) Operating income
- A company with multiple products can compute a breakeven point by assuming there is a constant ----- of products at different levels of total revenue.
  (a) revenues (b) single type (c) tax rate (d) sales mix
- -------- calculations emphasize the distinction between manufacturing and nonmanufacturing costs
  (a) Gross margin (b) gross income (c) operating income (d) contribution margin percentage
- ---------- are all costs in the income statement other than cost of goods sold.
  (a) contribution margin (b) prime costs (c) period costs (d) net income
- A change in the ---------- results in a change in the level of total costs.
  (a) cost driver (b) fixed costs (c) breakeven point (d) variable costs

Q3 (6) A merchandizing company plans to sell carpets for $1,100 each. The company will purchase the carpets from a local distributor for $550 each, with the privilege of returning any unsold units for a full refund. The company two payment alternatives for the use of space.

- ***Option*** 1: A fixed payment of $17,500 for the sale period.
- ***Option*** 2: 20 % of total revenues earned during the sale period.

Assume the company will incur no other costs.

1. The breakeven point in units for **option 1** = 32 units (31.8 rounded up)

FC = 17,500 S = 1,100 VC = 550 CMU = 550

$BE(\text{units}) = \frac{17,500}{550} = 31.818 \approx 32$ units

2. The level of revenues will the company earn the same operating income under **either option** = 87,500 $

$550Q + 17,500 = 330Q$ $\quad$ $220Q = 17,500$ $\quad$ $Q = 79.545 \approx 80$ units

Revenue $= 1,100(Q) = 87,500$

3. The degree of operating leverage at sales of 80 units for the **option 2** = 1

$\text{Leverage} = \frac{CM}{OI} = \frac{26,400}{26,400} = 1$

At 80 units CM = 330Q = 26,400 = OI (no fixed cost)

4. At sales of 85 units, the margin of safety percentage for **option 1** = 62.567%

Revenue = 85 × 1,100 = 93,500

breakeven revenue = $\frac{17,500}{550} \times 1,100 = 35,000$

$MOS\% = \frac{93,500 - 35,000}{93,500} = 0.625 = 62.567\%$

Q4 (4 pts) A manufacturing company reports the following information for two products; standard and flexible:

Description	Standard	Flexible	Total
Units sold	187,500	62,500	
Selling price/unit $	28	50	
Variable cost/unit $	18	30	
Fixed costs $			2,250,000

Std: CMU = 10

Flex: CMU = 20

mix 3 : 1 Std. Flex

Assuming that the company achieves **its planned sales mix**, calculate:

1. The breakeven point in **units**: standard = 135,000 Flexible = 45,000

CMU bundle = 3(10) + 1(20) = 50 $

Breakeven bundles = $\frac{2,250,000}{50} = 45,000$ bundles

units → Standard = 45k × 3 = 135,000

Flexible = 45k × 1 = 45,000

2. Suppose 250,000 units are sold but only 100,000 of them are flexible. The operating income = 1,250,000 $

$OI = (150,000(10) + 100,000(20)) - 2,250,000 = 1,250,000$ $

$150_{unit} = X + 100{,}000$ 16.5 / 20

The University of Jordan
Department of Industrial Engineering
Cost Accounting (**First Exam 20%**, 28/3/20223)

Name: Baraa
ID: 0148044 SR: 2

Q1 (9 pts) A metal manufacturing firm began production and sales operations on January 1, 2009. Costs ($) incurred to produce **10,000 units** in 2009. Variable manufacturing costs are variable with respect to units produced. Variable marketing, distribution, and customer-service costs are variable with respect to units sold. The beginning and ending finished goods inventories are carried out at the average unit manufacturing cost. There is no WIP beginning and ending inventory.

Description	Fixed ($)	Variable ($)
Purchases of raw material (orders)		165,000
Discount on purchased material		15 %
Direct material used costs		100,000
Prime costs		150,000
Plant energy costs		25,000
Depreciation, rent, and machines' indirect costs	10,000	
Indirect manufacturing labor costs	5,000	10,000
Marketing, distribution, and customer service costs	10,000	15,000
Finished-goods inventory ($) January 1, 2009	**10,000**	
Finished-goods inventory ($) December 31, 2009	**25,000**	
Gross Margin	**20% sales revenues**	

7. *Calculate the average unit manufacturing cost.* ***Ans:*** 20 $/unit

$\frac{200{,}000}{10{,}000}$

8. *Calculate the inventoriable costs in 2009.* ***Ans:*** 200,000 $

$150{,}000 + (25 + 10 + 15) \times 10^3$

9. *Calculate the costs of goods sold.* ***Ans:*** 185,000

$200{,}000 + 10{,}000 - 25{,}000$

10. *Calculate the selling price.* ***Ans:*** $\frac{231250}{9250} = 25$ $/u

$P = \frac{Rev}{Q_s}$ $0.2R = R - 185{,}000 \Rightarrow R = 231250$ $Q_s = \frac{185{,}000}{20} = 9250$

11. *Calculate the variable cost per unit sold.* ***Ans:*** 20.121

$\frac{150{,}000 + 25{,}000 + 10{,}000}{10{,}000} + \frac{15{,}000}{9250} = 20.121$

12. *Suppose that a future quantity of 20,000 will be produced. Calculate the average unit manufacturing cost. Assume that the implied cost-behavior patterns persist.* ***Ans:*** 9.25 + 1.5 = 10.75 $

$\frac{150 + 25 + 10}{20{,}000} + \frac{15}{10} =$

$18.5 + 20{,}000 +$

12.5 11.5

25/30

The University of Jordan

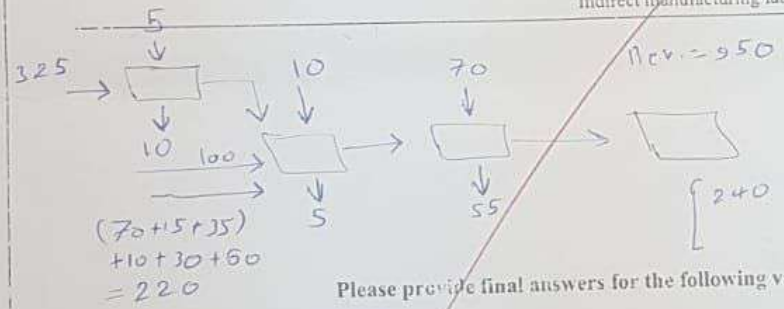
Date: 2/5/2023

Cost Accounting (Midterm Exam 30 %) **Instructor: Prof. Abbas Al-Refaie**

Name: Baraa Jalal **ID:** 0190090

Q1 (5 pts: 10 min) Given the following income statement:

For Specific Date		For Year 2014	
Direct materials inventory, Jan. 1, 2014	$5	Purchases of direct materials	$325
Work-in-process inventory, Jan. 1, 2014	10	Direct manufacturing labor	100
Finished goods inventory, Jan. 1, 2014	70	Depreciation—plant and equipment	70
Direct materials inventory, Dec. 31, 2014	10	Plant supervisory salaries	15
Work-in-process inventory, Dec. 31, 2014	5	Miscellaneous plant overhead	35
Finished goods inventory, Dec. 31, 2014	55	Revenues	950
		Marketing, distribution, and customer-service costs	240
		Plant supplies used	10
		Plant utilities	30
		Indirect manufacturing labor	60



Please provide final answers for the following variables:

1. Direct materials used = 320
   (325+5)-10
2. Manufacturing costs incurred during 2014 = 640
   320+100+220
3. Cost of goods manufactured = 645
   640+10-5
4. Conversion costs = 320
   100+220
5. Period costs = 240

Q2 (5 pts: 10 min) Please state whether each of the following statements is True/False. Correct the false part.

1. An increase in the income tax rate does not affect the breakeven point. ---T---
2. Operating leverage describes the effects that costs have on changes in operating income as changes occur in contribution margin. ---F--- → Fixed
3. Changes in the sales mix change breakeven points and operating income. ---T---
4. A fixed cost remains unchanged in total for a given time period when no changes in the related volume. ---F--- when changes occure
5. Inventoriable costs are all costs of a product that are considered as assets in the balance sheet when they are incurred and that become ~~period costs~~ Cost of goods sold when the product is sold. ---F---
6. Conversion costs are all manufacturing costs other than direct manufacturing costs. ---F--- Materiale
7. Merchandising-sector companies purchase and then sell intangible products without changing their basic form. ---F--- → tangible
8. Property taxes on plants are considered period costs. ---F--- overhead
9. Marketing, distribution, and customer-service costs are considered period costs. ---T---
10. Operating leverage increases when total fixed costs increase. ---T---

↑ OL = CM / (CM − TF) ↓

Q3 (6 pts: 15 min) ABC Company manufactures and sells dishes. Currently, **5,000,000 units are sold** per year. Contribution margin percentage = 0.4. Variable manufacturing costs are $0.20 per unit. In addition to their salaries, salespeople are paid a commission of $0.1 for each dish they sell. Each year, ABC Company pays $48,000 in rent and utilities and $32,000 for salespeople's salaries. ABC company also spends $10,000 on local advertisements. Its tax rate is 5%. **Calculate:**

CM% = 0.4
V_{CU} = 0.2
F = 48,000 + 32,000 + 10,000 = 90,000
0.4 = CMPU / S

1. Contribution margin per unit: ---0.2---

CMPU = S − 0.2 − 0.1
0.4S = S − 0.2 − 0.1
S = 0.5

2. A 20% decrease in fixed costs, a 20% decrease in selling price, a 10% decrease in variable cost per unit, and a 40% increase in units sold: ~~14 68,000~~

F_N = 72,000
S_N = 0.4 Q = 7,000,000
V_{CU} = 0.18
OI = (7,000,000)(0.4) − (7,000,000)(0.18) − 72,000 = 1/2

3. How many dishes shall be sold in order to have a target net income of $100,000? : ---976315.7895---

100,000 = OI × (1 − 5%)
OI = 105263.1579
= (90,000 + 105263.1579) / 0.2

1 year = 12 month

60 month + $\frac{\text{year}}{12}$ = 5 y

Q2 (5 pts) Please state whether each of the following statements is True/False. Please correct the false part:

11. Traced rent and lease costs in the merchandise sector are treated as direct manufacturing costs. (Period cost ---------- F)
12. Distribution and sales documented costs in an industrial sector are treated as direct period costs. (---------- T)
13. A merchandising company has no inventoriable cost. (has inv. cost ---------- F)
14. Administrative sale costs are treated as indirect manufacturing costs. (Period cost ---------- F)
15. Depreciation on equipment used in a service industry is charged as period cost. (---------- T)
16. Period costs are all costs in the income statement other than operating income. (Cost of Goods sold ---------- F)
17. The number of produced batches by a production department can be used as a cost driver. (---------- T)
18. Traced design costs to a specific product are regarded as direct manufacturing costs. (---------- T)
19. Fire insurance costs on factory buildings are considered direct and fixed costs. (indirect ---------- F)
20. Shipping costs of merchandise to customers are charged as merchandise costs. (Period cost ---------- F)

5

6,000 unit/month × $\frac{12\ \text{mon}}{y}$ = 720

Q3 (6 pts) ABS manufactures mechanical parts in a fully automated machine that can make 2,550 mechanical parts per month. The machine costs $15,000 and is depreciated using straight-line depreciation over 60 months, assuming zero residual value. Rent and other fixed manufacturing overhead cost total $3,000 per month. ABS currently makes and sells 2,000 mechanical parts per month. Materials cost $45 per mechanical part. Next year, ABS manufacturer expects demand to increase by 200%. At 200 % volume of materials purchased, it will get a 5 % discount on the price, while at 300 % volume of materials purchased, it will get a 7.5% discount on the price. Annual rent and other fixed manufacturing overhead costs will increase by 5 %.

35

4. How, if at all, will total annual fixed and variable manufacturing costs change next year? Assume that if it needs ABS manufacturer could buy one identical machine, each at the same cost as the one it already has.

$3{,}000 \times 2 + 3{,}000 \times 12 \times 1.05 + 72000 \times 42.75 = 3120000$

* variable will increase in total and Fixed stays the same in total

5. If the ABS manufacturer decides to increase its production capacity by 200 %, what is the annual relevant range of the output?

3 machines

$2{,}550 \frac{\text{unit}}{\text{month}} \times 12 \frac{\text{month}}{y} = 30600 \frac{\text{unit}}{\text{year}}$, when 200% (30600 × 2)

$\frac{1}{2}\ 30600 < x < 91800 = 61200$ u/y

6. If the ABS manufacturer decides not to increase its production capacity, calculate the annual variable and fixed costs.

$3{,}000 \times 12 \times 1.05 + 2{,}000 \times 12 \times 45 = 1{,}119{,}000$

3:1

6.5

Q5 (8 pts: 15 min) XYZ Company retails two products: A and B versions of a luggage carrier. The budgeted income statement for the next period is as follows:

	A-TYPE	B-TYPE	
Units sold	187,500	62,500	= 250,000
Selling price	($28	$50	
Variable costs at $18 and $30 per unit	~~$15~~	~~$20~~	
Fixed costs		2,250,000	

28-18

1. The breakeven point in units, assuming that the company achieves its planned sales mix = 180,000

A 10 3 30

B 20 1 20

50 CM B

BEP = 2250,000 / 50 = 45,000 B

50-30

A: 45,000 × 3 = 135000

B: 45,000 × 1 = 45,000

180,000

2

2. Suppose 250,000 units are sold but only 50,000 of them are B-type. The breakeven point in units. ↗

A B

200,000 50,000

4 : 1

28-18

A 4 10 40

B 1 30 30

70 CM B

BEP = 2,250,000 / 70 = 32142.85714 B

131786.2857

A 32142.85714 × 4 = 128571.4286

B " × 1 = 32142.85714

Total

50-20

2

3. **Given the following information:**

Revenues		$500,000
Cost of goods sold		250,000 V
Gross margin		250,000
Operating costs:		
Salaries fixed	$160,000	
Sales commissions (**11% of sales**)	55,000 V	
Store rent ($4,000 per month)	63,000	
Other operating costs	50,000	
Operating income (loss)		328,000
		$ (78,000)

The owner of the XYZ Trade Company is unhappy with the operating results. An analysis of **other operating costs** reveals that it includes $45,000 variable costs, which vary with sales volume, and $5,000 (fixed) costs.

- Contribution margin percentage = 0.3 = 30%.

CM = 500,000 − (250,000 + 55,000 + 45,000) = 150,000

1/CM = 150,000 / 500,000 = 0.3

2

- If units sold increased, and hence revenues increased by 20% by incurring additional advertising costs of $12,000. The impact of the additional advertising costs on **operating income** = ~~=48000~~

Rev$_N$ = 600,000

CGS$_N$ = 300,000

COM$_N$ = 66000

V = 54,000

OI = 600,000 − (300,000 + 66000 + 54,000) − (150,000 + 63,000 + 5,000)

2

1/2

...the following statements is True/False. Correct the false part.

4.5

3

Q4 (6 pts: 15 min) ABC company sells electronic products through a network of external sales agents. The **agents** are paid a commission of 20% of revenues. ABC company is considering replacing the sales agents with **its own salespeople**, who would be paid a commission of 13% of revenues and paid fixed salaries. Given the following information at the end of the year 2013:

	(A) Agents	(B) Own salespeople
Revenues $	32,000,000	32,000,000
Cost of goods sold $:		
Variable	12,160,000	12,160,000
Fixed	3,750,000	3,750,000
Marketing $:		
Marketing commission =% Revenues	20%R = 6400000	13%R = 4160000
Fixed costs	3,660,000	5,900,000
CALCULATE THE FOLLOWING:		
Operating income		
Operating leverage		
Breakeven revenues	?	?
The margin of safety percentage		

Please provide the final answers to unknown terms in the Table.

$OI_A = 32,000,000 - 12,160,000 - 6400000 - 3750,000 - 3660,000$

$= 6030000$

$CM_A = 13440000$

$OI_B = 32,000,000 - 12,160,000 - 4160000 - 3,750,000 - 5,900,000$

$= 6030000$

$CM_B = 15080000$

$OL_A = \frac{CM_A}{OI_A} = 2.2288$

$OL_A = 2.20$

Break even rev. $_A = Q_{BEP(A)} * Rev_A$

Break even rev. $_B = Q_{BEP(B)} * Rev_B$

$S_A = 6400000$

$S_B = 4160000$

$Q_{BEP(A)} = \frac{3750,0000 + 3660,000}{6400000 - 12,160,000 - 64,000} =$

$Q_{BEP_B} = \frac{3750,0000 + 5900000}{4160000 - 12160000 - 4160000} =$

If the revenues increase by 5%, how much the operating income will increase? *Which option you will recommend? Explain*

4