Tutorial Letter 203/3/2015

APPLICATION OF MANAGEMENT ACCOUNTING TECHNIQUES

MAC3701

SEMESTER 1 and SEMESTER 2

Department of Management Accounting

This tutorial letter contains important information about your module.

Dear Student

This tutorial letter contains the suggested solution to the self-assessment assignment. It is in your own interest to attempt the questions as if in an exam setting and thereafter to work through the suggested solution in conjunction with the questions and your own answer.

Kind regards,

	Telephone number	E-mail	
Mr NP Mudau	012 429 6937	MAC3701-15-s1@unisa.ac.za	Semester 1 or
Mrs Y Reyneke	012 429 4046	MAC3701-15-s2@unisa.ac.za	Semester 2
Mr M Ramaleba	012 429 4334		

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LECTURERS: MAC3701

It is important that you have access to MyUnisa and view the MAC3701 site on a regular basis as the lecturers participate actively on MyUnisa. The lecturers will place important announcements on MyUnisa from time to time and it is therefore in students' own best interest to visit the site regularly.

QUESTION 1

a. Material purchase price variance = (SP – AP) x AQ purchased

Rubber:

(24 – AP) x (9 000 + 44 000) = -106 000
24 – AP = -106 000 / 53 000
24 – AP = -2
AP = R26 per m^2√√

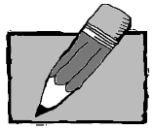
Soft fabric:

(15 – AP) x (10 000 + 52 000) = 186 000
15 – AP = 186 000 / 62 000
15 – AP = 3
AP = R12 per m^2√√ (4)

Note:
In this question, materials are bought on a JIT basis and there will therefore be no difference between material quantities purchased and used. Revise what will happen to the materials variances when quantities purchased differ from quantities used.

b.

	R
Budgeted profit	1 635 900,00
Add/less: Sales margin volume variance (based on standard profit)	61 350,00(F)
Mix ①	6 812,50(A)
Quantity ④	68 162,50(F)
Standard profit	1 697 250,00
Add/less:	21 410,00(F)
Sales margin price variance	100 000,00(F)
Small mat (180 – 200) x 5 000√√	100 000,00(A)
Regular mat (260 – 250) x 20 000√√	200 000,00(F)
Material purchase price variance	80 000,00(F)
Rubber (given)	106 000,00(A)
Soft fabric (given)	186 000,00(F)
Material mix variance	15 273,00(A)
Small mat ⑤	3 276,00(A)
Regular mat ⑤	11 997,00(A)
Material yield variance	161 727,00(A)
Small mat ⑦	47 724,00(A)
Regular mat ⑦	114 003,00(A)
Labour rate variance	108 000,00(A)
Small mat ⑧	16 200,00(A)
Regular mat ⑧	91 800,00(A)
Idle time variance	43 200,00(F)
Small mat ⑨	6 480,00(F)
Regular mat ⑨	36 720,00(F)
Labour efficiency variance	48 800,00(F)
Small mat ⑩	3 680,00(A)
Regular mat ⑩	52 480,00(F)
Variable manufacturing overhead expenditure variance	2 500,00(A)
Small mat ⓿	7 500,00(F)
Regular mat ⓿	10 000,00(A)
Variable manufacturing overhead efficiency variance	0
Fixed overhead expenditure variance ❶	19 740,00(A)
Fixed overhead volume capacity variance ❷	6 180,00(A)
Fixed overhead volume efficiency variance ❸	62 830,00(F)
Actual profit	1 718 660,00



Note:
Also revise what to do when a business uses a standard variable costing system.

Calculations:

① Sales margin mix variance (based on standard profit) √√√√

	Actual sales volume (units)	Actual sales volume in budgeted proportions (units)	Difference in units	Standard profit (R)	Sales margin mix variance (R)
Small	5 000	6 250②	(1 250)	72,25③	90 312,50(A)
Regular	20 000	18 750②	1 250	66,80③	83 500,00(F)
	25 000	25 000			6 812,50(A)

② Budgeted proportions

Small: 1/(1+3) = ¼ = 25%
Regular: 100% - 25% = 75%

Actual sales volume in budgeted proportions

Small: 25% x 25 000 = 6 250 units
Regular: 75% x 25 000 = 18 750 units

③ Standard profit calculations:

Fixed manufacturing overhead recovery rate = 896 100 / 8 700 = R103 per productive direct labour hour√

Small mat:

	R
Selling price	200,00
Direct materials (36 + 27)	(63,00)
Direct labour	(20,00)
Variable manufacturing overheads	(19,00)
Fixed manufacturing overheads (103 x 15/60)	(25,75)
Standard profit	72,25

√√

Regular mat:

	R
Selling price	250,00
Direct materials (48 + 37,50)	(85,50)
Direct labour	(32,00)
Variable manufacturing overheads	(24,50)
Fixed manufacturing overheads (103 x 24/60)	(41,20)
Standard profit	66,80

√√

④ Sales quantity variance (based on standard profit) √√√√

	Actual sales volume in budgeted proportion (units)	Budgeted sales volume (units)	Difference in units	Standard profit (R)	Sales quantity variance (R)
Small	6 250②	24 000 x 1/(1+3) = 6 000	250	72,25③	18 062,50(F)
Regular	18 750②	24 000 x 3/(1+3) = 18 000	750	66,80③	50 100,00(F)
	25 000	24 000			68 162,50(F)

⑤ Material mix variance: Small mat√√

	Actual usage in standard mix proportions (m^2)	Actual usage in actual proportions (m^2)	Difference in usage (m2)	Standard price (R per m^2)	Mix variance (R)
Rubber	19 000 x 1,5/3,3⑥ = 8 636 (rounded)	9 000	(364)	24	8 736,00(A)
Soft fabric	19 000 x 1,8/3,3⑥ = 10 364 (rounded)	10 000	364	15	5 460,00(F)
		19 000			3 276,00(A)

Material mix variance: Regular mat√√

	Actual usage in standard mix proportions (m^2)	Actual usage in actual proportions (m^2)	Difference in usage (m2)	Standard price (R per m^2)	Mix variance (R)
Rubber	96 000 x 2/4,5⑥ = 42 667 (rounded)	44 000	(1 333)	24	31 992,00(A)
Soft fabric	96 000 x 2,5/4,5⑥ =53 333 (rounded)	52 000	1 333	15	19 995,00(F)
		96 000			11 997,00(A)

⑥ Standard usage

Small mat:
Rubber: 36/24 = 1,5 m^2
Soft fabric: 27/15 = 1,8 m^2
Total: 1,5 + 1,8 = 3,3 m^2

Regular mat:
Rubber: 48/24 = 2 m^2
Soft fabric: 37,50/15 = 2,5 m^2
Total: 2 + 2,5 = 4,5 m^2

⑦ Material yield variance: Small mat√√

	Input allowed for *actual output* **(m^2)**	**Actual usage in standard mix proportions (m^2)**	**Difference in yield (m^2)**	**Standard price (R per m^2)**	**Yield variance (R)**
Rubber	1,5⑥ x 5 000 = 7 500	8 636⑤	(1 136)	24	27 264(A)
Soft fabric	1,8⑥ x 5 000 = 9 000	10 364⑤	(1 364)	15	20 460(A)
		19 000			47 724(A)

Material yield variance: Regular mat√√

	Input allowed for *actual output* **(m^2)**	**Actual usage in standard mix proportions (m^2)**	**Difference in yield (m^2)**	**Standard price (R per m^2)**	**Yield variance (R)**
Rubber	2⑥ x 20 000 = 40 000	42 667	(2 667)	24	64 008(A)
Soft fabric	2,5⑥ x 20 000 = 50 000	53 333	(3 333)	15	49 995(A)
		96 000			114 003(A)

⑧ Labour rate variance√√

	Standard rate per clock hour	**Actual rate per clock hour**	**Difference in rate**	**Actual clock hours**	**Labour rate variance R**
Small	(20/0,25)# x 0,9 = R72	R84	R12	1 296/(9 000 – 360) x 9 000 = 1 350	16 200(A)
Regular	(32/0,4)# x 0,9 = R72	R84	R12	9 000 – 1 350 = 7 650	91 800(A)
					108 000(A)

15/60 and 24/60

⑨ Idle time variance√√√√

	Standard allowed idle time % applied to actual clock hours	**Actual productive hours**	**Difference in productive hours**	**Standard work hour rate per productive hour**	**Idle time variance R**
Small	1 350 x 90% = 1 215	1 296	(81)	20/0,25 = R80	6 480(F)
Regular	7 650 x 90% = 6 885	(9 000 – 360) – 1 296 = 7 344	(459)	32/0,4 = R80	36 720(F)
					43 200(F)

⑩ Efficiency variance√√√

	Standard productive hours allowed for *actual output*	**Actual productive hours**	**Difference in productive hours**	**Standard rate per productive hour**	**Efficiency variance R**
Small	0,25 x 5 000 = 1 250	1 296⑨	(46)	R80⑨	3 680(A)
Regular	0,4 x 20 000 = 8 000	7 344⑨	656	R80⑨	52 480(F)
					48 800(F)

⓿ Variable manufacturing overhead expenditure variance√√

	Standard variable manufacturing overheads for allowed for *actual input* volume	**Actual variable manufacturing overheads**	**Difference**
Small	19,00 x 5 000 units = R95 000	17,50 x 5 000 = R87 500	R7 500(F)
Regular	24,50 x 20 000 units = R490 000	25,00 x 20 000 = R500 000	R10 000(A)
			R2 500(A)

❶ Fixed overhead expenditure variance√
=BFO – AFO
= 896 100 – 915 840
= R19 740 (A)

❷ Fixed overhead volume capacity variance√√
= (Actual input hours – budgeted input hours) x standard fixed overhead rate
= ([1 296 + 7 344]** – 8 700) x 103③
= (8 640 – 8 700) x 103
= R6 180(A)

** or simply 9 000 - 360

❸ Fixed overhead volume efficiency variance√√√
= (Standard input hours allowed for actual production – actual input hours) x standard fixed overhead rate
= ([5 000 x 0,25] + [20 000 x 0,4] – [9 000 – 360]) x 103
= (1 250 + 8 000 – 8 640) x 103
= R62 830(F)

(42)

Note: Our fixed overheads in this question are based on productive labour hours, so we simply use this as a basis and ignore clock hours and idle time here.

Notes:

- If you had to calculate **budgeted** profit yourself, your calculation would be as follows:

	R
Sales (6 000 x 200) + (18 000 x 250)	5 700 000
Less: Cost of sales	(4 064 100)
Direct materials ((36 + 27) x 6 000) + (48 + 37,50) x 18 000	1 917 000
Direct labour (20 x 6 000) + (32 x 18 000)	696 000
Variable manufacturing overheads (19 x 6 000) + (24,5 x 18 000)	555 000
Fixed manufacturing overheads	896 100
Profit	1 635 900

- If you had to calculate **standard** profit yourself, your calculation would be as follows:

  (5 000 x 72,25③) + (20 000 x 66,80③) = R1 697 250

- If you had to calculate **actual** profit yourself, your calculation would be as follows:

	R
Sales (5 000 x 180) + (20 000 x 260)	6 100 000
Less: Cost of sales	(4 381 340)
Direct materials (9 000 + 44 000) x R26 (from (a))	2 122 000
+ (10 000 + 52 000) x R12 (from (a))	
Direct labour (9000 x 84)	756 000
Variable manufacturing overheads (5 000 x 17,50) + (20 000 x 25)	587 500
Fixed manufacturing overheads	915 840
Profit	1 718 660

QUESTION 2

PART A

(a) Calculation of actual breakeven sales units for 2014

$$\text{Breakeven sales} = \frac{\text{Fixed costs}}{\text{Contribution per unit}}$$

$$= \frac{\text{R1 500 250}}{\text{R637,60①}}$$

$$= 2\,352,96$$

$$\approx 2\,353 \text{ units (rounded up) } \surd\text{^}$$

① Calculation of contribution per unit

	R	
Selling price (R88 000 000 ÷ 80 000 suitcases)	1 100,00	^
Less: Variable costs		
Material R19 090 000 ÷ 83 000kg = R230 per kg R230 x 81 050kg = R18 641 500 ÷ 80 000 suitcases = R233,02 per suitcase	233,02	√√
Labour R12 350 000 ÷ 80 000 suitcases = R154,38 per suitcase	154,38	^
Variable overheads R6 000 000 ÷ 80 000 suitcases = R75 per suitcase	75,00	^
= Contribution per suitcase	**637,60**	

(5)

b. Calculation of actual breakeven sales value for 2014

Breakeven sales units x selling price

= 2 353 suitcases x R1 100/suitcase

= R2 588 300 √

(1)

Alternative:

$$\text{Fixed costs} \div \text{Contribution ratio}$$

$$= \frac{1\ 500\ 250}{637{,}60/1\ 100}$$

$$= \frac{1\ 500\ 250}{0{,}5796}$$

= R2 588 423 (difference due to rounding)

c. Calculation of the units to be sold to obtain a R 2 000 000 profit for 2014

$$\text{Units sold for the target profit} = \frac{\text{Fixed costs + target profit}}{\text{Contribution per unit}}$$

$$= \frac{(R1\ 500\ 250 + R2\ 000\ 000)}{R637{,}60①}$$

$$= 5\ 489{,}73$$

$$\approx 5\ 490 \text{ units (rounded up) } √√$$

(2)

d. The expected value of suitcases the new machine will manufacture and advice to management

No. of suitcases	Probability	Weighted no. of suitcases	
61 000	0,10	6 100	^
73 000	0,15	10 950	^
74 500	0,18	13 410	^
80 000	0,24	19 200	^
87 000	0,22	19 140	^
95 000	0,11	10 450	^
		79 250	or √√√

Management should not purchase the new machine as the expected output of suitcases will be less than the current 80 000 being manufactured without the new machine. √

(4)

e. Explain the meaning of the terms standard deviation and coefficient of variation as measures of risk

Standard deviation is the "square root of the mean of the squared deviations from the expected value" (Drury 2012:282,291) (Drury 2015:209,299) √

Coefficient of variation is a "ratio measure of dispersion derived by dividing the standard deviation divided by the expected value" (Drury 2012:283,291) (Drury 2015:291,299) √

or

"Standard deviation measures the dispersion of the possible outcomes. It is an absolute measure. In contrast, the coefficient of variation is a relative measure derived from dividing the standard deviation by the expected value" (Drury 2012:290) (Drury 2015:298) √√

"Both measures attempt to summarise the risk associated with a probability distribution. They assume that risk is measured in terms of the spread of possible outcomes" (Drury 2012:290) (Drury 2015:298). √√

(4)

Note:
Remember that for MAC3701 you do not need to know how to calculate standard deviation or the coefficient of variation, but you must be able to interpret them when making decisions regarding uncertain future profits.

PART B

(a) Standard product mix I-gel:I-creme = 16 000:10 000 = 8:5. √

Number of "batches" to break even
= Total fixed costs / Contribution per batch
= (240 000 + 300 000 + 225 400) / ((8 x 720 000 / 16 000) + (5 x 1 000 000 / 10 000))
= 765 400 / (8 x 45 + 5 x 100)
= 765 400 / (360 + 500)
= 765 400√ / 860√
= 890 batches

Based on the standard product mix, this amounts to:
890 x 8 = 7 120 I-gels√
and
890 x 5 = 4 450 I-cremes√

(5)

(b) Break-even sales value
= Fixed costs / Contribution ratio
= 765 400 / ([720 000 + 1 000 000] / [(120 x 16 000) + (160 x 10 000])
= 765 400 √/ (1 720 000√ / 3 520 000√)
= 765 400 / 0,4886... √
= R1 566 400

Alternative:
Break-even sales value
= (7 120√ (from (a)) x R120√) + (4 450√ (from (a)) x R160√)
= 854 400 + 712 000
= R1 566 400

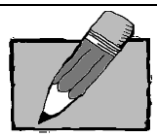
(4)

QUESTION 3

a. Return on investment (ROI)

ROI = controllable 'operating' profit / controllable investment
= R400 000 / R1 700 000
= 23,53% √√

(2)



Note:
The controllable operating profit was given in this question. Take note that it rightfully excludes interest on the loan. As the current liabilities are made up of normal trade payables and creditors, it should be taken into account in the calculation of controllable investment. It has a credit balance and should thus be subtracted from the R 2 100 000 gross controllable assets.

b. Residual income (RI)

RI = Controllable profit less cost of capital of controllable investment
= R400 000 – (R1 700 000 x 12%)
= R400 000 – R204 000
= R196 000 √√

(2)

c. "Return on investment would be the better measure"√
"when comparing divisions as it is a relative measure"√
"(i.e. based on percentage returns)"

(Drury 2012:749) (Drury 2015:775)

or

"To overcome some of the dysfunctional consequences of ROI, the residual income approach can be used." √
"Residual income suffers from the disadvantages of being an absolute measure, which means that it is difficult to compare the performance of a division with that of other divisions…"√

(Drury 2012:491) (Drury 2015:503)

(2)

d.i. **True** - The divisions cannot control these costs; therefore it should be excluded. √

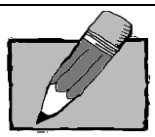
d.ii. **False** - Non-financial performance measures (which might influence the long-term sustainability of the business) should also be considered. √

d.iii. **True** - Refer to key terms and concepts on (page 500 √ or page 488 of Drury 8th Edition.) or (page 515 or page 500 of the 9th Edition)

(3)

e. The term **managerial performance** is used to refer to assessing the performance of the manager (person) at the profit centre and investment centre level in the organisation. √
The performance measure should only include controllable items. √
The term **economic performance** is used to refer to the performance of the division in comparison to other divisions in the organisation and those of competitors. √
It might include non-controllable and allocated costs. √
MAC3701 (MO001:75)

(4)



Note:
Also see Drury 8th Edition page 488 - 489 and 498 - 499. or 9th Edition page 500 – 501 and 514 - 515

QUESTION 4

a.

Physical units			Equivalent units			
Input		**Output**	**Raw materials**		**Conversion**	
(units)	**Details**	**(units)**	**Units**	**%**	**Units**	**%**
	Input					
25 000	Opening WIP					
75 000	Put into production					
	Output					
	Completed and transferred	80 000	80 000^	100	80 000^	100
	Normal loss	①4 000✔	③-^		③-^	
	Abnormal loss	②11 000^	11 000^	100	6 600^	60
	Closing WIP	5 000^	5 000^	100	3 500^	70
100 000		100 000	96 000		90 100	

(6)

① 100 000 x 4% = 4 000
② Balancing figure
③ We use the short-cut method as the question has required its use if the conditions for its use are met. Losses occur at a specific point and all units reach the wastage point in the current period, so the conditions are met.

b.

Physical units			Equivalent units			
Input		**Output**	**Raw materials**		**Conversion**	
(units)	**Details**	**(units)**	**Units**	**%**	**Units**	**%**
	Input					
25 000	Opening WIP					
75 000	Put into production					
	Output					
	Completed and transferred	80 000	80 000^	100	80 000^	100
	Normal loss	④3 000✔	-^		-^	
	Abnormal loss	⑤12 000^	12 000^	100	12 000^	100
	Closing WIP	5 000^	5 000^	100	3 500^	70
100 000		100 000	97 000		95 500	

(6)

④ 75 000 x 4% = 3 000
⑤ Balancing figure

Simplified summary of basic differences between methods used in MAC2601 and MAC3701:

1. In MAC2601, we never used the short-cut method. However, in MAC3701 we can use the short-cut method when the question does not specifically disallow its use **and** either of the following applies:

- Losses occur at a **specific point** in the process **and all** your units in the output column have passed or reached the wastage point **in the current period**
- Losses occur **evenly** throughout the process (then you can always use the shortcut method for purposes of MAC3701 (Drury method))

The **first** bullet above **basically** means that:

- Opening WIP % of completion (at the beginning of this period) <= WP
- Closing WIP % of completion (at the end of this period) >= WP

OR in other words

- If opening WIP reaches/passes the wastage point in the current period (i.e. has not yet reached/passed this point when the current period begins)
- If closing WIP has reached/passed this point by the end of the current period

2. In MAC2601, normal losses always occurred at a **specific point** in the process and were calculated on **all units that reached/passed the wastage point in the current period**. In MAC3701, the possibility is added that normal losses **can occur evenly throughout the process** (see point 1 above) and are **sometimes calculated only on "inputs"** (by referring to "inputs" in terms of the normal loss, Drury actually means the units put into production/started in the current period).

   A MAC3701 question should specify whether losses occur evenly throughout the process or at a specific point and if it occurs at a specific point, which units the loss should be calculated on.

3. In MAC2601, **abnormal losses** could occur either at the same point in the process than the normal loss, or when a specific event takes place causing an abnormal loss at a different point in the process. In both these cases, we used the percentage of completion when **the abnormal loss occurred** as our percentage in the equivalent units for conversion column.

   When losses occur **evenly** throughout the process and are **detected at the end** of the process, we will use 100% as our percentage in the equivalent units for conversion column (see above question). For simplicity, we will **not** combine (in MAC3701) a **once-off** event causing an abnormal loss to occur at a specific point with normal losses occuring **evenly** throughout the process. For simplicity, the **detection** of losses will always be at the end of the process for MAC3701 purposes **if the losses occur evenly** throughout the process.

QUESTION 5

Budgeted statement of profit or loss for the six months ended 31 October 2014

	R	
Revenue ((R5 000 000 X 108%)/ 2))	2 700 000	√
Cost of sales ((R2 000 000 X 105%)/ 2))	(1 050 000)	√
Gross profit	**1 650 000**	
Other income – dividends from Assus Ltd (Accrued last year)	-	√
Less: Operating expenses	**(1 336 620)**	
Depreciation ①	180 000	√√
Finance costs/ Interest on loan ((R3 000 000 x 8%) / 2))	120 000	√
Rental expense ②	177 120	√√
Salaries (R120 000 x 106% x 6 months)	763 200	√
Administrative expenses (R15 000 x 107% x 6 months)	96 300	√
Profit before tax	**313 380**	
Income tax expense (R3 000 x 6 months)	18 000	√
Profit after tax	**295 380**	

Calculations:

① Depreciation

- Office equipment ((R1 000 000 x 80%) x 20%) / 2)) = R80 000
- Machinery ((R1 000 000 x 20%) / 2)) = R100 000

= R180 000

② Rental expense

- Factory (R16 000 x 105% x 6 months) = R100 800
- Vehicles (R12 000 x 106% x 6 months) = R76 320

= R177 120

(11)

QUESTION 6

(a) Economic order quantity

$$= \sqrt{\frac{2 \times U \times C}{H+(P \times i)}}$$

$$= \sqrt{\frac{2 \times 10\,000 \times R200 \quad \surd}{R5 +(R30 \times 15\%) \quad \surd}}$$

$$= \sqrt{\frac{R4\,000\,000}{R9{,}50}}$$

= 648,8856...

= 649 calculators (Rounded up) √

(3)

(b) Re-order point = (average rate of usage x lead time) + safety stock

= ((10 000 / 250) x 10) + 80 √√

= 480 calculators √

(3)

QUESTION 7

(a) COST DRIVERS

Activities	**Cost drivers**
Material acquisition	Number of orders ^
Material handling	Material movements ^
Machine setups	Machine setups ^
Machine maintenance	Machine hours ^
Indirect labour	Indirect labour hours ^

(2,5)

(b) Profit per unit

	Product			
	Wing	**Zing**	**Xeng**	
Selling price	R55,00	R70,00	R58,00	√
Variable cost per unit	R1,85	R2,62	R3,58	√
Fixed cost per unit ①	R49,15	R61,38	R49,42	√
Profit per unit	**R4,00**	**R6,00**	**R5,00**	√

① Fixed cost per unit

	Product			
	Wing	**Zing**	**Xeng**	
Material acquisition	R30 000	R50 000	R20 000	√
(3/10 X R100K) (5/10 X R100K) (2/10 X R100K)				
Material handling	R16 667	R8 333	R25 000	√
(2/6 X R50K) (1/6 X R50K) (3/6 X R50K)				
Machine set ups	R13 333	R40 000	R26 667	√
(1/6 x R80K) (3/6 x R80K) (2/6 x R80K)				
Machine maintenance	R24 444	R36 667	R48 889	√
(2/9 x R110K) (3/9 x R110K) (4/9 x R110K)				
Indirect labour	R13 846	R18 462	R27 692	√
(3/13 x R60K) (4/13 x R60K) (6/13 x R60K)				
Total	**R98 290**	**R153 462**	**R148 248**	√
Units	2 000	2 500	3 000	
Fixed cost per unit	**R49,15**	**R61,38**	**R49,42**	√

OR ALTERNATIVELY

① Activity rates

Material acquisition	(R100 000 / 10)	=	R10 000 per order
Material handling	(R50 000 / 6)	=	R8 333,33 per material movement
Machine setups	(R80 000 / 6)	=	R13 333,33 per machine setup
Machine maintenance	(R110 000 / 9)	=	R12 222,22 per machine hour
Indirect labour	(R60 000 / 13)	=	R4 615,38 per indirect labour hour

	Product			
	Wing	**Zing**	**Xeng**	
Material acquisition	R30 000	R50 000	R20 000	√
(3 x R10 000) (5 x R10 000) (2 x R10 000)				
Material handling	R16 667	R8 333	R25 000	√
(2 x R8 333,33) (1 x R8 333,33) (3 x R8 333,33)				
Machine setups	R13 333	R40 000	R26 667	√
(1 x R13 333,33) (3 x R13 333,33) (2 x R13 333,33)				
Machine maintenance	R24 444	R36 667	R48 889	√
(2 x R12 222,22) (3 x R12 222,22) (4 x R12 222,22)				
Indirect labour	R13 846	R18 462	R27 692	√
(3 x R4 615,38) (4 x R4 615,38) (6 x R4 615,38)				
Total	**R98 290**	**R153 462**	**R148 248**	√
Units	2 000	2 500	3 000	
Fixed cost per unit	**R49,15**	**R61,38**	**R49,42**	√
				(11)

QUESTION 8

(a) Selling price per unit

Material A	R10 000	√	- Must be replaced
Material B	R12 000	√	- Must be purchased
Direct labour type A (R3 000 x 10 hours)	R30 000	√	- Incremental cost of project
Direct labour type B (R1 000 x 6 hours)	R6 000	√	- Incremental cost of project
Architect (R10 000 / 5 = R2 000 per bridge)	R2 000	√	- Incremental cost of project
Administrative expenses (R10 000 / 5 = R2 000 per bridge)	R2 000	√	- Direct project cost
General overheads	-	√	- Allocated arbitrarily – not direct project cost
Machinery and equipment hire (R30 000 / 5 = R6 000 per bridge)	R6 000	√	- Incremental cost of project
Own machinery and equipment	-	√	- Irrelevant as it is sunk cost
Total cost	**R68 000**		
Add mark-up (R68 000 x 10%)	**R6 800**		
Selling price per bridge	**R74 800**	√	

(10)

(b) Other factors

- The potential to get future business from the Local Municipality.
- The effect of the short term order on future prices to other customers.
- Whether the Local Municipality will understand that future pricing will be different.
- The ability of the casual labourers to complete the project at the required quality level.
- The bid made by the competitor.
- The effect on employee morale.
- Any other relevant factor.

Any two will earn the marks. (2)

References:
Drury, C. 2012. *Management and cost accounting.* 8th edition. And: Cengage Learning or
Drury, C. 2015. *Management and cost accounting.* 9th edition. And: Cengage Learning

It is in your own interest to go to the MyUnisa website on a regular basis and to be on the lookout for any new announcements.