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GRADE 11

NOVEMBER 2015

**MATHEMATICAL LITERACY P2
MEMORANDUM**

MARKS: 100

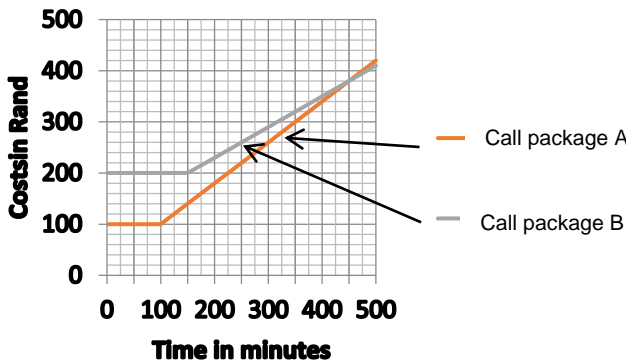
Symbol	Explanation
M	Method
MA	Method with accuracy
CA	Consistent accuracy
A	Accuracy
C	Conversion
S	Simplification
RT/RG/RM	Reading from a table/Reading from a graph/Read from map
F	Choosing the correct formula
SF	Substitution in a formula
J	Justification
P	Penalty, e.g. for no units, incorrect rounding off, etc.
R	Rounding Off/Reason

This memorandum consists of 6 pages.

QUESTION 1

1.1	1.1.1	5 Entrances ✓✓	2A Identifying the number of entrances	(2)
	1.1.2	<ul style="list-style-type: none"> Walk straight towards Shop No. 6 and turn left. ✓ Edgars will be on your left continue until you get to Shop No. 60 and turn right. ✓ Keep walking until Shop No. 52-53 and turn left where Entrance 2 is ✓ Accept any reasonable explanation	3A Explanation	(3)
1.2	1.2.1	1h ✓ 57 minutes ✓	1A Hours 1A Minutes	(2)
	1.2.2	$11:20 + 45 \text{ min} + 15 \text{ min} \checkmark = 12:20 \checkmark$ It will be too late to watch the 12:15 screening ✓ $14:45 + 1:57 = 16:42 + 40 \text{ min} \checkmark = 17:22 \text{ min} \checkmark$ The only time slot will be the 14:45 screening and still be at home on time. ✓	1M Adding 45 min and 15 min 1A 1O Opinion 1A Adding 1h57 and 40 min 1A Time to arrive at home 1O Conclusion	(6)
	1.2.3	<ul style="list-style-type: none"> Cleaning of the cinema ✓ To prepare for the next showing ✓ OR <ul style="list-style-type: none"> Allow the cinema crew to take a break ✓ Accept any other relevant reasons	1A First reason 1A Second reason	(2)
1.3	1.3.1	Regular pricing = $75 + 55 \checkmark \checkmark = R130 \checkmark$	1A Identifying the correct values 1M Adding 1A	(3)
	1.3.2	<ul style="list-style-type: none"> It is too expensive on a Sunday or weekends ✓✓ OR <ul style="list-style-type: none"> On other days its much cheaper ✓✓ Accept any other explanation	2O Explanation	(2)
				[20]

QUESTION 2

2.1	2.1.1	(a)	<p>Total cost (in rand) = R200 ✓ + number of minutes more than 150 ✓ x R0,60 ✓</p> <p>OR</p> <p>Total cost (in rand) = R 200 ✓ + (number of minutes more than 150) ✓ x R0,60 ✓</p> <p>OR</p> <p>Total cost (in rand) = R200 ✓ + (number of minutes – 150) ✓ x R0,60 ✓</p>	<p>1A Rental</p> <p>1A Minutes more than 150</p> <p>1A Multiply by 60 cents</p> <p>1A Rental</p> <p>1A Minutes more than 150</p> <p>1A Multiply by 60 cents</p> <p>1A Rental</p> <p>1A Minutes more than 150</p> <p>1A Multiply by 60 cents</p>	(3)
		(b)	<p>Total cost (in rand) = R200 + (number of minutes – 150) x R0,60</p> <p>= 200 + (625 – 150) x 0,60 ✓</p> <p>= 200 + (475 ✓ x 0,60)</p> <p>= 200 + 285 ✓</p> <p>= R485,00 ✓</p>	<p>CA from 2.1.1 (a)</p> <p>1SF</p> <p>1S</p> <p>1S</p> <p>1A</p>	(4)
	2.1.2	<p>Landline Call Packages</p> 		<p>1 Mark for line 0–100 minutes</p> <p>1 Mark for the correct break-even point</p> <p>2 Marks for any other 3 points plotted correctly</p> <p>1M Labelling Call Package A</p>	(5)
	2.1.3	For the same number of minutes used ✓ the same amount will be paid for both Call packages ✓	<p>1A refer to minutes</p> <p>1A refer to cost</p>	(2)	
	2.1.4	Break-even point (450 ✓; 380 ✓)	<p>CA from 2.1.2</p> <p>1CA 450 minutes</p> <p>1CA 380 rand</p> <p>If order incorrect 0</p>	(2)	

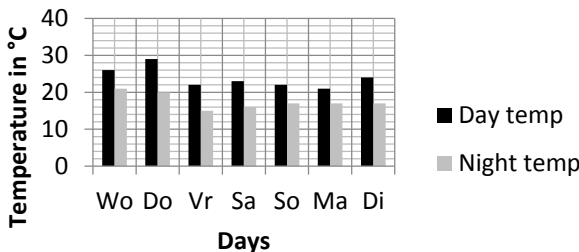
	2.1.5	<p>Call package A Total cost = $100 + (451 - 100) \times 0,80$ ✓ = $100 + (351 \times 0,80)$ = $100 + 280,8$ = R 380,80 ✓</p> <p>Call package B Total cost = $200 + (451 - 150) \times 0,60$ = $200 + (301 \times 0,60)$ = $200 + 180,60$ = R 380,60 ✓</p> <p>Difference = R 380,80 – R 380,60 = R 0,20 ✓</p> <p style="text-align: center;">OR</p> <p>Call package A - Call package B = $100 + (451 - 100) \times 0,80$ ✓ – $200 + (451 - 150) \times 0,60$ = $100 + (351 \times 0,80) - 200 + (301 \times 0,60)$ = $100 + 280,80 - 200 + 180,60$ = R 380,80 ✓ – R 380,60 ✓ = R 0,20 ✓</p>	1SF 1CA 1CA 1CA Difference 1SF 1CA 1CA 1CA Difference	(4)
	2.1.6	<p>Would recommend that Mr. Gardner use Call Package A ✓ With R 300 on Call Package A he will get 350 minutes ✓✓ With R 300 on Call Package B he will get 316 minutes to 317 minutes ✓✓</p>	1CA Choosing correct package 2 CA 2 A	(5)
2.2		<p>Number of households = $10 \times 10 \times 10 \times 10$ ✓ = 10 000 ✓</p>	1A Identifying 10 1M Multiplying 10 four times 1CA	(3)
[28]				

QUESTION 3

3.1	3.1.1	$A = 17,20 \times 1,14 \checkmark$ $= R\ 19,61 \checkmark$ $B = \frac{31,95}{1,14} \checkmark$ $= R28,03 \checkmark$	1M 1A 1M 1A	(4)
	3.1.2	No✓, she will not pay for the first 6 kl✓	1A 1O	(2)
	3.1.3	Payment for 19,5 kl $= (6 \times 0) + (4,5 \times 7,60) + (9 \times 11,61) \checkmark$ $= R\ 0 + R\ 34,20 + R\ 104,49 \checkmark$ $= R\ 138,69 \checkmark \times 1,14$ $= R\ 158,11 \checkmark$	1M 1S 1A 1A Including VAT	(4)
3.2	3.2.1	Diameter = 750 mm, therefore radius = 375 mm ✓ = 0,375 m Height = 2230 mm = 2,230 m ✓ Volume = $3,142 \times 0,375\text{ m}^2 \times 2,230\text{ m} \checkmark$ $= 3,142 \times 0,140625\text{ m}^2 \times 2,230\text{ m}$ $= 0,985311562\text{ m}^3 \checkmark \times 1000$ $= 985,311562 /$ Accept 985,312 ✓ Therefore; $1000 / \neq 985,311562 / \checkmark$ OR $985,312 \checkmark$	1A Finding radius 1A Convert mm to m (both) 1SF 1S radius ² 1CA in litres 1A	(6)
	3.2.2	The given volume was rounded to the nearest 1000 ✓ Consumers are under the impression that you buy a tank with a capacity of 1 000 l, while it only has a tank capacity of 985 l. ✓✓	1O 2O	(3)
	3.2.3	Tank can overflow if it is filled above the recommended filled height ✓✓	2R	(2)
	3.2.4	Any of the vertical round water tanks ✓✓	2A	(2)
3.3	Bar graph ✓ and Pie chart ✓		1A Bar graph 1A Pie chart	(2)

[25]

QUESTION 4

4.1	4.1.1	Mean = $\frac{26 + 29 + 22 + 23 + 22 + 21 + 24}{7}$ ✓ = $\frac{167}{7}$ = 23,85714286 ✓ = 24 °C ✓	1M adding all day temp 1M/7 1CA 1CA	(4)																							
	4.1.2	Range = 29 °C – 15 °C ✓ = 14°C ✓	1M concept of range 1A	(2)																							
	4.1.3	Median = 15; 16; 17; 17; 17; 20; 21 ✓ = 17 °C ✓	1M Arrange values 1A	(2)																							
	4.1.4	Night temperatures decreases from Wednesday to Friday and then increases on Saturday and then from Sunday remains constant until Tuesday ✓✓	2O	(2)																							
	4.1.5	Monday ✓ with 4 °C ✓	1RT Day 1A Difference	(2)																							
	4.1.6	Friday ✓✓	2RT	(2)																							
	4.1.7	<div>Day and night temperatures for George from 14 Jan - 20 Jan 2015</div> <div><table><thead><tr><th>Days</th><th>Day temp (°C)</th><th>Night temp (°C)</th></tr></thead><tbody><tr><td>Wo</td><td>26</td><td>29</td></tr><tr><td>Do</td><td>22</td><td>23</td></tr><tr><td>Vr</td><td>22</td><td>21</td></tr><tr><td>Sa</td><td>24</td><td>24</td></tr><tr><td>So</td><td>24</td><td>24</td></tr><tr><td>Ma</td><td>24</td><td>24</td></tr><tr><td>Di</td><td>24</td><td>24</td></tr></tbody></table></div>	Days	Day temp (°C)	Night temp (°C)	Wo	26	29	Do	22	23	Vr	22	21	Sa	24	24	So	24	24	Ma	24	24	Di	24	24	Any 4 pairs correctly plotted 1Mark for legend 1 Mark correct graph
Days	Day temp (°C)	Night temp (°C)																									
Wo	26	29																									
Do	22	23																									
Vr	22	21																									
Sa	24	24																									
So	24	24																									
Ma	24	24																									
Di	24	24																									
4.2	It is highly unlikely that it will rain on Friday because it is only 30% which is small chance for rain to fall ✓✓		2O	(2)																							
4.3	4.3.1	Time = $\frac{\text{Distance}}{\text{Speed}}$ = $\frac{64,7 \text{ km}}{90 \text{ km/h}}$ ✓ = 0,7188....hours x 60 ✓ = 43,133... = 43 minutes ✓	1M 1S 1A	(3)																							
	4.3.2	Your speed will decrease ✓ therefore it will take you longer ✓ to complete the trip	1A refer to speed 1A refer to time	(2)																							
				[27]																							

TOTAL: 100