



Province of the
EASTERN CAPE
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 11

NOVEMBER 2011

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 7 pages.

QUESTION 1				
1.1				
LO3 ASS 11.3.4	1.1.1	D2 ✓1	(1)	1:A
	1.1.2	<p>Scale of the map = 1:10 000 Map distance = 15,8 cm Actual distance = $15,8 \times 10\,000$ = $\frac{158\,000}{100\,000}$ ✓ = 1,58 km ✓</p> <p style="text-align: center;">OR</p> <p>$\frac{10\,000}{100\,000}$ = 0,1 km ✓ = $0,1 \times 15,8$ ✓ = 1,58 km ✓</p> <p style="text-align: center;">OR</p> <p>$15,8 \times 10\,000$ = $\frac{158\,000}{100}$ ✓ = 1 580 1 000 ✓ = 1,58 km ✓</p>	(3)	1:MA 1:C 1:A
LO3 ASS 11.3.4	1.1.3	<p>No. ✓ It is a one-way street and he can only turn left into De Villiers Street at that point. ✓✓</p>	(3)	1:A 2:O
LO3 ASS 11.3.2	1.1.4	<p>$0,6 \times 10\,000 = 6\,000 / 100 = 60\text{ m}$ ✓✓ $0,5 \times 10\,000 = 5\,000 / 100 = 50\text{ m}$ ✓</p> <p>Area = L x B = 60 m x 50 m ✓ = 3 000 m² ✓</p> <p style="text-align: right;">CA</p>	(5)	2:M 1:C 1:SF 1:A
1.2				
LO1 ASS 11.1.2	1.2.1	<p><u>Mr Brend</u> <u>Mr Brice</u> $\frac{1}{2} \times 320$ $\frac{1}{3} \times 320$ OR $\frac{2}{3} \times 320$ ✓ = 160 ✓ = 106,67 ✓✓ = R 213,33 ✓✓ R 320 – R160 R 320 – R106,67 = R160 ✓ = R213,33 ✓</p> <p>Disagree. ✓ She will pay R53,33 (R 213,33 – R 160) more at Mr Brice. ✓✓</p> <p style="text-align: center;">OR</p> <p>She will pay R53,33 less (cheaper) at Mr Brend. ✓✓ CA</p>	(8)	1:MA 1:MA 1:MA 1:R 1:MA 1:A 2:O

1.3				
LO4 ASS 11.4.5	1.3.1	6 outfits ✓✓	(2)	2:A
LO4 ASS 11.4.5	1.3.2	(summer outfit) = $\frac{1}{2}$ ✓ (jeans) $\times \frac{2}{3}$ ✓ (shirts) = $\frac{2}{6}$ ✓ = $\frac{1}{3}$ ✓ OR P(summer outfit) = 0,5 ✓ \times 0,666 ✓ = 0,333 ✓✓	(4)	2:A 1:MA 1:A
1.4				
LO1 ASS 11.1.1	1.4.1	Time spent = 15h13 – 9h45 ✓ = 14h73 ✓ – 9h45 = 5h28 ✓	(3)	1:M 1:C 1:A
LO4 ASS 11.4.2	1.4.2	R15,00 ✓✓	(2)	2:A
			[31]	

QUESTION 2																							
LO1 ASS 11.1.1	2.1	(a)	(i)	$\frac{1}{5} \times 500$ = R100 ✓	OR	$\frac{4}{5} \times 500$ ✓ = R400 ✓	1:MA																
				Profit for Oranges = 500 – 100 = R400 ✓		(2)	1:MA																
			(ii)	160 x 100% = 160 ✓ Profit for Avocados = 160 + 160 = R320 ✓		(2)																	
		(b)	(i)	$350 \times 70\%$ = R245 ✓	OR	$350 \times 30\%$ ✓ = R105 ✓	1:MA																
				Profit for Bananas = 350 – 245 = R105 ✓		(2)	1:MA																
			(ii)	$\frac{3}{4} \times 160$ = 120 ✓	OR	$\frac{7}{4} \times 160$ ✓ = R 280 ✓	1:MA																
				Profit for Avocados = 160 + 120 = R280 ✓		(2)	1:MA																
LO1 ASS 11.1.1	2.2	% increase = $\frac{350 - 300}{300} \times 100$ ✓ = $\frac{50}{300} \times 100$ ✓ = 16,7% ✓					1:M 1:MA (3) 1:A																
LO4 ASS 11.4.2	2.3	<div><h3>Profits from June to August</h3><table border="1"><thead><tr><th>Month</th><th>Oranges</th><th>Bananas</th><th>Avocados</th></tr></thead><tbody><tr><td>June</td><td>500</td><td>300</td><td>160</td></tr><tr><td>July</td><td>400</td><td>350</td><td>320</td></tr><tr><td>August</td><td>600</td><td>105</td><td>280</td></tr></tbody></table></div>					Month	Oranges	Bananas	Avocados	June	500	300	160	July	400	350	320	August	600	105	280	July: 1 mark for each correct bar (3) CA August: 1 Mark for each correct bar (3) CA 1: Label July 1: Label August
Month	Oranges	Bananas	Avocados																				
June	500	300	160																				
July	400	350	320																				
August	600	105	280																				
						(8)																	

LO4 ASS 11.4.2	2.4	Oranges ✓ The bars for oranges are in highest for the 3 months. ✓	(2)	1:CA 1:R																									
LO4 ASS 11.4.3	2.5	<p>Average (Mean) = $\frac{500 + 300 + 160 + 400 + 350 + 320 + 600 + 105 + 280}{9}$ ✓</p> <p>= $\frac{3015}{9}$ ✓</p> <p>= R335 ✓</p> <p style="text-align: center;">OR</p> <table border="1"> <thead> <tr> <th></th><th>Oranges</th><th>Bananas</th><th>Avocados</th><th>Total</th></tr> </thead> <tbody> <tr> <td>June</td><td>R500</td><td>R300</td><td>R160</td><td>R960</td></tr> <tr> <td>July</td><td>R400</td><td>R350</td><td>R320</td><td>R1 070</td></tr> <tr> <td>August</td><td>R600</td><td>R105</td><td>R280</td><td>R985</td></tr> <tr> <td>Total</td><td>R1 500</td><td>R755</td><td>R760</td><td>R3 015</td></tr> </tbody> </table> <p>Average (Mean) for June – August = $\frac{3015}{3}$ ✓</p> <p>= 1 005</p> <p>Average per month = $\frac{1\,005}{3}$ ✓</p> <p>= R335 ✓</p> <p style="text-align: right;">CA</p>		Oranges	Bananas	Avocados	Total	June	R500	R300	R160	R960	July	R400	R350	R320	R1 070	August	R600	R105	R280	R985	Total	R1 500	R755	R760	R3 015	(4)	2:M 1:A 1:A
	Oranges	Bananas	Avocados	Total																									
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			(4)																										
			[25]																										

QUESTION 3				
3.1				
LO3 ASS 11.3.1	3.1.1	Area of Jacuzzi = $\frac{1}{4} \pi r^2 \checkmark$ $= \frac{1}{4} (3,14 \times 1,4^2) \checkmark$ $= \frac{1}{4} (6,1544 \text{ m}^2) \checkmark$ $= 1,54 \text{ m}^2 \checkmark$	OR $A = \pi r^2 \checkmark$ $= 3,14 \times 1,4^2 \checkmark$ $= \underline{6,1544 \text{ m}^2}$ $\quad \quad \quad 4 \checkmark$ $= 1,54 \text{ m}^2 \checkmark$	1:F 1:SF 1:4 1:A
			(4)	
LO3 ASS 11.3.1	3.1.2	Area of shower = $\frac{1}{2} \text{ base} \times \text{height} \checkmark$ $= 0,5 \times 1,1 \text{ m} \times 1,1 \text{ m} \checkmark$ $= 0,61 \text{ m}^2 \checkmark$	(3)	1:F 1:SF 1:A
LO3 ASS 11.3.1	3.1.3	Area of wash basin cabinet = length \times breadth \checkmark $= 0,7 \text{ m} \times 0,5 \text{ m} \checkmark$ $= 0,35 \text{ m}^2 \checkmark$	(3)	1:F 1:SF 1:A
LO3 ASS 11.3.1	3.1.4	Area to be tiled = Area of Bathroom – Area of Jacuzzi – Area of shower – Area of wash basin cabinet $= (3,9 \text{ m} \times 2,5 \text{ m}) - 1,54 \text{ m}^2 - 0,61 \text{ m}^2 - 0,35 \text{ m}^2$ $= 9,75 \text{ m}^2 \checkmark - 1,54 \text{ m}^2 - 0,61 \text{ m}^2 - 0,35 \text{ m}^2$ $= 7,25 \text{ m}^2 \checkmark$ OR Area to be tiled = Area of Bathroom – (Area of Jacuzzi + Area of shower + Area of wash basin cabinet) $= (3,9 \text{ m} \times 2,5 \text{ m}) - (1,54 \text{ m}^2 + 0,61 \text{ m}^2 + 0,35 \text{ m}^2)$ $= 9,75 \text{ m}^2 \checkmark - 2,5 \text{ m}^2$ $= 7,25 \text{ m}^2 \checkmark$	CA (2)	1:MA 1:A
LO3 ASS 11.3.1 LO3 ASS 11.3.2	3.1.5	25 cm = 0,25 m \checkmark Area of tile = 0,25 m \times 0,25 m OR (0,25 ²) $= 0,06 \text{ m}^2 \checkmark$ Number of tiles needed = $\frac{7,25 \text{ m}^2}{0,06 \text{ m}^2}$ $= 120,83 \text{ tiles}$ $= 121 \text{ tiles} \checkmark$	CA (3)	1:C 1:A 1:MA
LO3 ASS 11.3.1	3.1.6	No. \checkmark You always have to buy more for wastage and breakage. $\checkmark \checkmark$	(3)	1:A 2:R/O
3.2				
LO2 ASS 11.2.1	3.2.1	$12 \checkmark = w \checkmark \times t \checkmark$ OR $w \checkmark = \frac{12 \checkmark}{t \checkmark}$ OR $t \checkmark = \frac{12 \checkmark}{w \checkmark}$	(3)	3:F
LO2 ASS 11.2.1	3.2.2	(a) Number of workers = $\frac{12}{2}$ $= 6 \checkmark$	(1)	1:A
		(b) Time taken in hours = $\frac{12}{3}$ $= 4 \checkmark$	(1)	1:A
LO2 ASS 11.2.3	3.2.3	As the time in hours decreases, \checkmark the number of workers increases. \checkmark	(2)	2:O

LO2 ASS 11.2.3	3.2.4	Inverse or Indirect proportion. ✓			(1)	1:A
LO2 ASS 11.2.3	3.2.5	No. ✓ There will be too many workers for the allocated area. ✓✓ OR There will not be enough space for 12 workers to move around. ✓✓			(3)	1:A 2:O
					[29]	
QUESTION 4						
LO2 ASS 11.2.1	4.1.1	(a)	R 300 ✓		(1)	1:A
		(b)	R 700 ✓		(1)	1:A
LO2 ASS 11.2.1	4.1.2	(a)	± 28 months ✓✓ (Accept 26 – 27 months)		(2)	2:A
		(b)	R 800 ✓ (Accept R780 – R800)		(1)	1:A
LO2 ASS 11.2.3	4.1.3	(a)	Talana: Shares increased at a constant rate. ✓ Illustrated by a straight line graph. ✓		(2)	2:A
		(b)	Tiara: Shares increased at a compound rate. ✓ Illustrated by a curved line. ✓		(2)	2:A
4.2 LO1 ASS 11.1.1	A = P(1 + i) ⁿ = 700 (1 + 0,055) ⁴ ✓ = 700 (1,055) ⁴ = 700 (1,238824651) ✓ = R867,18 ✓ Yes ✓ It is R7,18 more ✓✓ CA				(6)	1:SF 1:S 1:A 1:A 2:O
					[15]	
	TOTAL:					100