



Province of the
EASTERN CAPE
EDUCATION

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

SEPTEMBER 2014

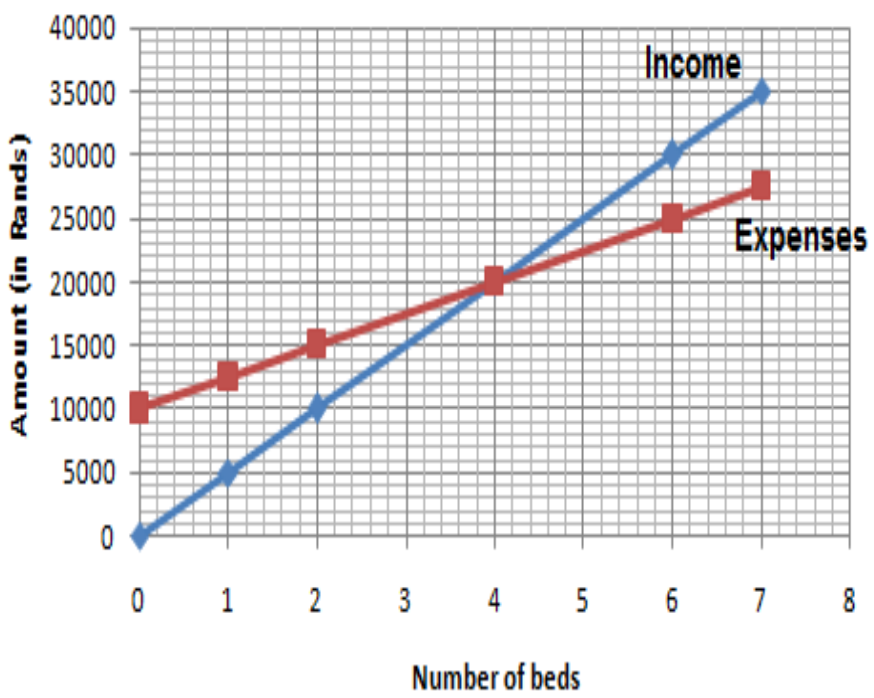
**MATHEMATICAL LITERACY P1
MEMORANDUM**

MARKS: 150

Symbol	Explanation
M	Method
A	Accuracy
CA	Consistent accuracy
RT/RG/RM	Reading from a table/Reading from a graph/Read from map
SF	Substitution in a formula
P	Penalty, e.g. for no units, incorrect rounding off etc.

This memorandum consists of 8 pages.

QUESTION 1 (Answer only FULL marks)				
Question		Solution	Explanation	
1.1	1.1.1	$2013 - 1978 \checkmark$ $= 35 \text{ years } \checkmark$	1M 1A	(2)
	1.1.2	$16^{\text{th}}, 25^{\text{th}} \text{ and } 26^{\text{th}} = R35 \times 24$ $= R840 \checkmark$ $= +R19 \times 8 \times 17,50 \ 800 \checkmark\checkmark$ $= R2 \ 660 + R840 \checkmark$ $= R3 \ 500 \checkmark$ OR $17,50 \times 19 \times 8 + 3 \times 35 \times 8) \checkmark$ $2 \ 660 + 840 \checkmark$ $= R3 \ 500,00 \checkmark$	2M 1CA 1M 1S 1CA	(3)
	1.1.3	$R2 \ 660 \times 5\% \checkmark$ $= R133,00 \checkmark$	1M 1CA (If the answer used is in 1.1.2)	(2)
1.2	1.2.1	$R5 \ 000 - R2 \ 500 \checkmark$ $= R2 \ 500,00 \checkmark$	1M 1A	(2)
	1.2.2	$R5 \ 000 \times 6 + R1 \ 000 \checkmark$ $= R30 \ 000 + R1 \ 000$ $= R31 \ 000,00 \checkmark$	1M 1A	(2)
1.3	1.3.1	$C = 10 \ 000 \checkmark + 2 \ 500 \times n \checkmark$	2A 1 Mark each correct value	(2)
	1.3.2	$A = R5 \ 000 \times 2 \checkmark$ $= R10 \ 000 \checkmark$	1M 1A	(2)
		$B = R10 \ 000 + R2 \ 500 \times 6 \checkmark$ $= R25 \ 000 \checkmark$	1M 1A	(2)
	1.3.3	$(4, 20000) \checkmark\checkmark$	2A -RT	(2)

	1.3.4	<p style="text-align: center;">Income and Expenses of Barry's Queen beds</p> 		
		<p>(0,0) – 1 mark any point – 1 mark income line graph correctly plotted</p> <p>(0,10000) – 1 mark any point – 1 mark Expenses line graph correctly plotted</p>	(4)	
1.4	1.4.1	$A = R140 \times 12\%$ $= R16,80 \checkmark$ $= R140 + R16,80$ $= R156,80 \checkmark$	1M 1A	
		OR		
		$R140 \times 1,12\% \checkmark$ $= R156,80 \checkmark$	1M 1A	(2)
		$B = \frac{R188,80 - R170,86}{R170,86} \times 100\% \checkmark \text{ SF}$ $= \frac{R17,94}{R170,86} \times 100\% \checkmark$ $= 10,4999\%$ $= 10,5\% \checkmark$ $C = R140 + R231,99 + R170,86 +$ $R630,50 + R380,98 \checkmark$ $= R1\ 554,33 \checkmark$	1SF 1S 1A 1M 1A	(3)
		OR		
		$C = R1\ 771,94 - R217,61 \checkmark$ $= R1\ 554,33 \checkmark$	1M 1A	(2)

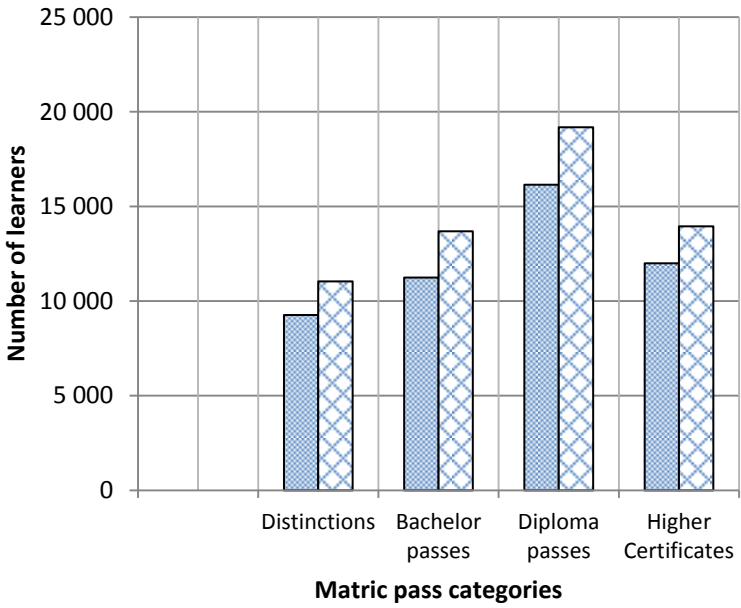
	1.5.1	Interest 1 st year $= R5\,000,00 \times \frac{7,5}{100} \sqrt{\quad}$ $= R375,00 \sqrt{\quad}$ OR $= 5\,000 \times 0,075 \sqrt{\quad}$ $= R375 \sqrt{\quad}$	Answer ONLY full marks (Whole 1.5 QUESTION) 1M 1A	(2)
	1.5.2	$R5\,000,00 + 3 \times R375 \sqrt{\quad}$ $= R6\,125,00 \sqrt{\quad}$	1M 1A	(2)
	1.5.3	$\frac{6\,125}{36} \sqrt{\quad}$ $= R170,40 \sqrt{\quad}$	1M 1A	(2)
				[36]

QUESTION 2

Question	Solution	Explanation	Marks
2.1 2.1.1	$\frac{108}{6} = 18 \sqrt{\quad}$	2A	(2)
2.1.2	$R4\,950 \times 6$ $= R29\,700 \sqrt{\quad}$	2A	(2)
2.1.3	Area of a tank $= \pi r^2$ $= 3,142 (130 \text{ cm})^2 \sqrt{\quad}$ $= 53\,099,8 \text{ cm}^2 \sqrt{\quad}$	1Correct radius 1A	(2)
2.1.4	$V = \pi r^2 h$ $= 3,142 \times (1,3 \text{ m})^2 \times 4,18 \text{ m} \sqrt{\quad}$ $= 22,19 \text{ m}^3 \sqrt{\quad}$	1M- conversion 1S,1CA – when cm used	(3)
2.1.5	$22,2 \times 1\,000 \sqrt{\quad}$ $= 22\,200 \text{ l} \sqrt{\quad}$	1SF 1A	(2)
2.1.6	$\frac{2,1}{7} = 0,3 \text{ kl}$ per day per household $\sqrt{\quad}$ $= 0,3 \text{ kl}$ per day per household There are 18 households per tank of 22,2 kl $= 18$ household need $18 \times 0,3 \text{ kl}$ per day $= 5,4 \text{ kl}$ $= 1$ tank will lose $5,4 \text{ kl}$ per day Then $= \frac{22,2 \text{ kl}}{5,4 \text{ kl}} = 4,11$ days Therefore each tank will last for 4 days	1D 1S 1A	(3)

2.2	2.2.1	$2 \text{ kg} = 2\,000 \text{ grams}$ ✓✓	2A	(2)
	2.2.2	$^{\circ}\text{F} = (1,8 \times ^{\circ}\text{C}) + 32^{\circ}$ $= (1,8 \times 180) + 32^{\circ}$ ✓ $= 356^{\circ}$ ✓	1SF 1A	(2)
	2.2.3	05:30:56 + 25:00 ✓	1M	
		= 05: 55:56 ✓ OR 5h:55min:56 sec	1A	(2)
	2.2.4	$\frac{1\,117}{24}$ ✓ $= 46,5$ ✓ $= 47 \text{ trays}$ ✓	1M 1S 1A	(3)
2.3	2.3.1	Accept weight between 61 kg – 83 kg ✓✓ OR 135 lbs – 183 lbs ✓✓	2A Accept (60 kg – 83 kg)	(2)
	2.3.2	$\text{BMI} = \frac{110 \text{ kg}}{(1,68 \text{ m}^2)}$ ✓ $= \frac{110 \text{ kg}}{2,8224}$ ✓ $= 45,4 \text{ kg/m}^2$ ✓	1SF, 1S, 1CA (Giving answer without squaring the height)	(3)
	2.3.3	Obese ✓✓	2A	(2)
				[55]
QUESTION 3				
Question	Solution	Explanation		
3.1	3.1.1	Aquarium ✓✓	2A-RM	(2)
	3.1.2	N ₂ ✓✓	2A-RM	(2)
	3.1.3	50 000 x 8 ✓ = 400 000 cm/100 000 ✓ = 4 km ✓	1M 1C 1A	(3)
	3.1.4	Summerpride ✓✓ Cambridge/Cambridge West ✓✓	(Any one) 2A	(2)
3.2	3.2.1	5 ✓✓	2A-RP	(2)
	3.2.2	5 ✓✓	2A-RP	(2)
	3.2.3	Area = Length x breadth ✓ = 3,55 m x 3,55 m ✓ = 12,60 m ² ✓	1F 1C 1A	(3)

	3.2.4	$\frac{12,60}{1,1} \checkmark = 11,46 = 12 \text{ boxes } \checkmark$	1M 1A	(2)
	3.2.5	$12 \times R94,99 + R60 \times 12,60 \checkmark$ $= R1\,139,88 + R756 \checkmark$ $= R1\,895,88 \checkmark$	1M 1S 1A	(3)
	3.2.6	Elevation plan is a cross section plan \checkmark from different directions or sides of a building. \checkmark (Accept any correct explanation.)	2A correct explanation	(2)
				[23]
QUESTION 4				
Question	Solution		Explanation	Marks
4.1	4.1.1	51,54,55,56,56,56,58,63,65,71,72,73 $\checkmark\checkmark$ 1 max mark when one number is missing	2A	(2)
	4.1.2	$\frac{51+54+55+56+56+56+58+63+65+71+72+73}{12} \checkmark$ $= \frac{730}{12} \checkmark$ $= 60,8 \checkmark$	2M 1A	(3)
	4.1.3	$\frac{59+62}{2} \checkmark$ $= \frac{121}{2} = 60,5 \checkmark$ OR 46,52,52,58,59,62,63,63,64,66 $121 \div 2 \checkmark$ $= 60,5 \checkmark$	2A 1M 1A	(2)
	4.1.4	$\frac{56+58}{2} \checkmark$ $= \frac{114}{2}$ $= 57 \checkmark$	2A	(2)
	4.1.5	$\frac{3}{12} = \frac{1}{4} \checkmark = \text{OR } 25\% \checkmark$	1S 1A	(3)
	4.1.6	56 and 63 $\checkmark\checkmark$	2A	(2)
4.2	4.2.1	2007 $\checkmark\checkmark$	2RT	(2)
	4.2.2	24,4% $\checkmark\checkmark$	2RT	(2)

	5.2.3	<p style="text-align: center;">Eastern Cape Results 2012–2013</p>  <table border="1" style="margin-left: auto; margin-right: auto;"> <caption>Eastern Cape Results 2012–2013</caption> <thead> <tr> <th>Matric pass category</th> <th>2012</th> <th>2013</th> </tr> </thead> <tbody> <tr> <td>Distinctions</td> <td>~9,500</td> <td>~11,000</td> </tr> <tr> <td>Bachelor passes</td> <td>~11,500</td> <td>~14,000</td> </tr> <tr> <td>Diploma passes</td> <td>~16,500</td> <td>~19,500</td> </tr> <tr> <td>Higher Certificates</td> <td>~12,000</td> <td>~14,000</td> </tr> </tbody> </table>	Matric pass category	2012	2013	Distinctions	~9,500	~11,000	Bachelor passes	~11,500	~14,000	Diploma passes	~16,500	~19,500	Higher Certificates	~12,000	~14,000	
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		1 mark for correct graph 1 mark for each pair of bars correctly plotted. (4 marks)	(5)															
5.3	$R399,00 \times 5\%$ $= R19,95 \checkmark$ $R399,00 - R19,95$ $= R379,05 \checkmark$	1M 1A	(2)															
5.4	$7,99 \times 3,2 \checkmark$ $= R25,57 \checkmark$	1M 1A	(2)															
5.5	5.5.1	$\frac{50}{95} \checkmark = \frac{10}{19} = 52,63\% \checkmark$	2A (2)															
	5.5.2	$\frac{70}{95} \checkmark = \frac{14}{19} \checkmark$ Accept 73,68%	2A (2)															
		TOTAL:	150															