



Province of the  
**EASTERN CAPE**  
EDUCATION

**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 12**

**SEPTEMBER 2015**

**MATHEMATICAL LITERACY P1  
MEMORANDUM**

**MARKS: 150**

<b>Symbol</b>	<b>Explanation</b>
M	Method
A	Accuracy
CA	Consistent accuracy
RT/RG/RM	Reading from a table/Reading from a graph/Read from map
RP	Reading from the plan
SF	Substitution in a formula
S	Simplifications
P	Penalty (no units, incorrect rounding off etc.)
O	Opinion
J	Justification
RO	Rounding Off

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This memorandum consists of 8 pages.

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QUESTION 1 [33]				
Question		Solution	Explanation	Marks
1.1	1.1.1	20 ✓✓	2RT	(2)
	1.1.2	$R1\ 250\ 000 \times 20\% \checkmark$ $= R250\ 000 \checkmark$ $= R1\ 250\ 000 - R250\ 000 \checkmark$ $= R1\ 000\ 000 \checkmark$	1M 1S 1M 1A	(4)
	1.1.3	$\text{Monthly Repayment} = \frac{1\ 000\ 000}{1\ 000} \times 10,32 \checkmark$ $= R10\ 320 \checkmark$	1CV 1 SF 1S	(3)
	1.1.4	$R10\ 320 \times 12 \times 20 \checkmark$ $= R123\ 840 \times 20 \checkmark$ $= R2\ 476\ 800,00 \checkmark$	1M 1S 1S	(3)
	1.1.5	$R2\ 476\ 800 - R1\ 000\ 000 \checkmark$ $= R1\ 476\ 800,00 \checkmark$	1CV 1S	(2)
1.2	1.2.1	6 brackets ✓✓	2A	(2)
	1.2.2	$\frac{R47\ 6012,28}{12} \checkmark$ $= R39\ 667,69 \checkmark$	1M  1S	(2)
	1.2.3	$\text{Annual tax} = 93\ 135 + 36\% \text{ of } (476\ 012,28 - 393\ 200) \checkmark$ $= 93\ 135 + 36\% \times (82\ 812,28) \checkmark$ $= 93\ 135 + 29\ 812,42$ $= 117\ 947,42 \text{ p.a. } \checkmark$ $122\ 947,42 - 13\ 257 \text{ (Rebate)} \checkmark$ $\text{Monthly tax} = \frac{109\ 690,42}{12}$ $= R9\ 140,87 \checkmark$	1M 1S  1S 1M  1A	(5)
	1.2.4	$\frac{2\ 975,08}{39\ 667,69} \times 100 \checkmark$ $= 7,5\% \checkmark$	1SF  1A	(2)

	1.2.5	Tax threshold refers to the amount of earnings at which people start paying tax, ✓ if you earn less than this amount a year, you do not pay tax. ✓	2 explanation	(2)
1.3	1.3.1	$R210,51 - R184,66 \checkmark$ OR $184,66 \times 14\% \checkmark$ $= R25,85 \checkmark$ $= R25,85 \checkmark$	1M 1S	(2)
	1.3.2	$6 \times 9,941230 + 4 \times 10,136180 + 6 \times 14,077830 \checkmark$ $= R59,65 \checkmark + R40,54 \checkmark + R84,47 \checkmark$ $= R184,66$	1M 3S	(4)
				<b>[33]</b>

**QUESTION 2 [28]**

Question		Solution	Explanation	Marks
2.1	2.1.1	24,5 °C ✓✓	2RD	(2)
	2.1.2	$7,7 \ell \approx 100 \text{ km}$ $\frac{7,7 \ell}{100} = \frac{100 \text{ km}}{100} \checkmark$ $0,077 \ell / \text{km} \checkmark$	1M divide by 100 1S	(2)
	2.1.3	$0,077 \times 13\,570,84 \checkmark$ $= 1\,044,95 \ell \checkmark$ $= 1\,045 \ell \checkmark$	1M 1S 1A	(3)
	2.1.4	$61 \text{ km/h} \times 1,05 \text{ hours} \checkmark$ $= 64,05 \text{ km} \checkmark$ $= 64\,050 \text{ m} \checkmark$	1M 1S 1A	(3)
	2.1.5	$1,05 \text{ hours} \times 60 \checkmark = 63 \text{ minutes}$ $= 1 \text{ hour } 3 \text{ minutes} \checkmark$ 17:24 $- 1:03$ 16:21 ✓  <b>OR</b> 17:24 arrival time $\frac{24}{60} = 0,4 \text{ hours} \checkmark$ 17 hours + 0,4 hours = 17,4 hours $- 1,05 \text{ hours}$ 16,35 hours ✓  16 hours + 0,35 hours $= 16 \text{ hours} + 0,35 \times 60 \text{ mins}$ $= 16 \text{ hours } 21 \text{ mins}$ $= 16:21 \checkmark$ The time she left East London.	1M 1S          1S	(3)
	2.1.6	Afternoon ✓✓	2A	(2)

2.2	2.2.1	Available drink = $15 \times 2 \ell$ = $30 \ell \checkmark$  Required drink = $250 \text{ ml} \times 116$ = $\underline{29\,000 \text{ ml}} \checkmark$ 1 000 = $29 \ell \checkmark$  It will be enough for all Grade 11 learners.	1C  1S  1A	(3)
	2.2.2	$\frac{2}{3} \times 250 \text{ ml}$  = $166,67 \text{ ml} \checkmark$ [Difference] $250 \text{ ml} - 166,67 \checkmark$ = $83,33 \text{ ml} \checkmark$	1S 1 subtraction 1A	(3)
2.3	2.3.1	$4 \times 24 \checkmark$ = $96 \text{ hours} \checkmark$	1M 1S	(2)
	2.3.2	$8\,471 \times 0,6214 \text{ miles} \checkmark$ $5\,263,88 \text{ miles} \checkmark$	1M 1S	(2)
	2.3.3	radius = $\frac{\text{diameter}}{2} = \frac{9 \text{ cm}}{2} = 4,5 \text{ cm} \checkmark$  Area of top = $\pi r^2$  = $3,142 (4,5 \text{ cm})^2 \checkmark$  = $63,63 \text{ cm}^2 \checkmark$	1M  1SF  1S	(3)
				<b>[28]</b>
<b>QUESTION 3 [23]</b>				
<b>Question</b>		<b>Solution</b>	<b>Explanation</b>	
3.1	3.1.1	GT 14 $\checkmark\checkmark$	2A	(2)
	3.1.2	5 $\checkmark\checkmark$	2A	(2)
	3.1.3	Glastonbury Road $\checkmark\checkmark$	2RM	(2)
	3.1.4	Albany Museum $\checkmark\checkmark$	2RM	(2)
	3.1.5	North West $\checkmark\checkmark$	2RM	(2)
3.2	3.2.1	Draw Front Board $\checkmark\checkmark$	2RM	(2)
	3.2.2	7 and 19 $\checkmark\checkmark$	2RM	(2)
	3.2.3	2 $\checkmark\checkmark$	2RM	(2)

	3.2.4	$\frac{47 \text{ mm}}{43 \text{ mm}} : \frac{1\,755 \text{ mm}}{43 \text{ mm}} \checkmark = 1 : 40,8 \checkmark$ (Accept 42 – 45 mm)	1C 1CA	(2)
	3.2.5	9 $\checkmark\checkmark$	2A	(2)
	3.2.6	$\frac{30 \checkmark}{200 \checkmark} = \frac{3}{20} \checkmark$ or 15% or 0,15	3A	(3)
				<b>[23]</b>

**QUESTION 4 [38]**

Question		Solution	Explanation	Marks
4.1	4.1.1	9 Provinces $\checkmark\checkmark$	2RT	(2)
	4.1.2	Northern Cape $\checkmark\checkmark$	2RT	(2)
	4.1.3	1 575 990 $\checkmark$ – 766 593 $\checkmark$ = 809 397 $\checkmark$	2 Correct values 1 CA	(3)
	4.1.4	A = 2 655 420 – (519 072 + 59 + 180 475 + 12 907 + 18 555 + 119 285) $\checkmark$ = 2 655 420 – 850 353 $\checkmark$ = 1 805 067 $\checkmark$ <b>OR</b> A = 11 302 312 – (883 802 + 766 593 + 279 724 + 999 473 + 1 650 665 + 2 702 811 + 1 575 990 + 638 187) $\checkmark$ = 11 302 312 – 9 497 245 $\checkmark$ = 1 805 067 $\checkmark$	1M 1S 1CA	(3)
		B = 18 555 + 6 221 + 15 686 + 35 919 + 12 745 + 8 998 + 4 694 + 8 683 + 11 312 $\checkmark$ = 122 813 $\checkmark$ <b>OR</b> B = 16 156 984 – (2 991 791 + 407 + 1 122 334 + 86 970 + 530 357 + 11 302 312) $\checkmark$ = 122 813 $\checkmark$	1Add  1CA	(2)
		C = 16 156 984 – (2 655 420 + 943 923 + 2 219 842 + 3 812 820 + 2 253 114 + 1 343 612 + 1 135 208 + 1 362 695) $\checkmark$ = 430 350 $\checkmark$ <b>OR</b> C = 774 409 + 11 + 48 473 + 5 304 + 4 694 + 14 735 + 2 797 24) $\checkmark$ = 430 350 $\checkmark$	1M  1A  1M  1A	(2)

	4.1.5	Graph		
		FS NC NW MP LP KZN EC GP WC		
		6 11 15 18 28 54 59 103 113		
		<p style="text-align: center;"><b>WAR VETERANS' GRANT PER PROVINCE</b></p> <p style="text-align: center;">PROVINCES</p>		
		1 Mark for 3 points correctly plotted = (3) 1 Mark for joining the points = (1)		(4)
		<b>Answer only full marks</b>		
	4.1.6	6 : 18 ✓ 1 : 3 ✓	2A	(2)
	4.1.7	KwaZulu Natal (35 919) ✓✓	2RT	(2)
	4.1.8	1 362 695 = One Million, ✓ three hundred and sixty two thousand, six hundred and ninety five ✓	2 A	(2)
4.2	4.2.1	Coke (Summer) = 18 700 ✓✓ (Accept 18 600 – 18 800)	2RG	(2)
	4.2.2	Autumn ✓ and Winter ✓	2RG	(2)
	4.2.3	Stacked bar graph or Stacked column graph or Stacked graph ✓✓	2A	(2)

4.3	4.3.1	$\frac{338,2 \times 2 + 371,95 + 311,7 + 155,9 + 758,7 + 251,4}{7} \checkmark$ $\text{Mean} = \frac{2\,526,05}{7} \checkmark$ $= 360,86 \checkmark$ $= 361 \checkmark$	1M 1 division By 7 1S 1A	(4)
	4.3.2	$\text{Range} = \text{R1 200,00} \checkmark - \text{R250,00} \checkmark$ $= \text{R950,00} \checkmark$	2CV 1CA	(3)
	4.3.3	$\text{R500,00} \checkmark \checkmark$	2A	(2)
				<b>[38]</b>
<b>QUESTION 5 [28]</b>				
Question	Solution		Explanation	Marks
5.1	5.1.1	$\text{R17 500,00} \checkmark \checkmark$  OR $\text{Venue A} = \text{R5 000} + \text{R125}(100)$ $= \text{R5 000} + \text{R12 500} \checkmark$ $= \text{R17 500,00} \checkmark$	2RG  AO	(2)
	5.1.2	$\text{Venue C} \checkmark \checkmark$	2RG	(2)
	5.1.3	$n = 6 \checkmark \checkmark$ OR (Trial and error) $\text{R4 000} : \text{R2 500} + \text{R250}(2) = \text{R3 000} \checkmark$ $\text{R2 500} + \text{R250}(4) = \text{R3 500}$ $\text{R2 500} + \text{R250}(6) = \text{R4 000}$ $n = 6$ correct answer $\checkmark$	2 RG Answer only Full marks  AO	(2)
	5.1.4	(i) $(20,7500) \checkmark \checkmark$ (ii) $(90,25000) \checkmark \checkmark$ (iii) $(160, 25000) \checkmark \checkmark$	2RM 2RM 2RM	(6)
	5.1.5	$\text{R5 000,00} \checkmark \checkmark$	2A	(2)
5.2	5.2.1	$^{\circ}\text{C} = (78,8 - 32) \div 1,8 \checkmark$ $= 46,8 \div 1,8 \checkmark$ $= 26^{\circ}\text{C} \checkmark$	1SF 1S 1A	(3)
	5.2.2	$\frac{10 \checkmark}{100 \checkmark} = \frac{1}{10} \checkmark$	1 numerator 1 denominator 1S	(3)

	5.2.3	Impossible OR 0 % ✓✓	2A	(2)
	5.3.1	$\frac{86}{14}$ ✓ $= 6,14$ ✓ $= 7$ minibus taxis ✓	1SF 1S 1S	(3)
	5.3.2	$10,83 \times 22,5 + 45 \times 14$ ✓ $= R243,68 + R630$ ✓ $= R873,68$ ✓	1M 1A 1S	(3)
				<b>[28]</b>
			<b>TOTAL:</b>	<b>150</b>