Province of the
EASTERN CAPE
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 12

SEPTEMBER 2016

MATHEMATICAL LITERACY P1 MEMORANDUM

MARKS: **150**

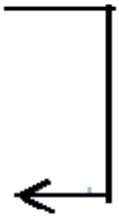
Symbol	Explanation
M	Method
A	Accuracy
CA	Consistent accuracy
RT/RG/RM	Reading from a table/Reading from a graph/Read from map
RP	Reading from the plan
SF	Substitution in a formula
S	Simplifications
P	Penalty (no units, incorrect rounding off etc.)
O	Opinion
J	Justification
R	Rounding
NPR	No Penalty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

This memorandum consists of 8 pages.

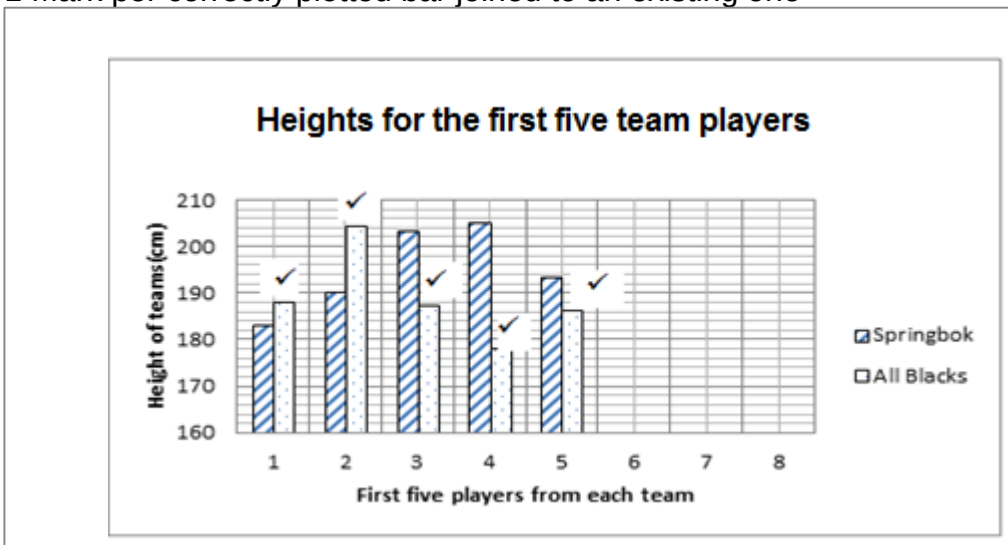
QUESTION 1			
Quest.	**Solution**	**Explanation**	**Marks**
1.1.1	South African Revenue Services ✓✓	2A	(2)
1.1.2	15 years 9 months ✓ = 15 x 12 + 9 ✓ = 189 months ✓	1 A 15 years 9 months 1M Conversion to months 1 CA	(3)
1.1.3	Five hundred and six thousand ✓ Four hundred and seventy four rand ✓	2A In words	(2)
1.1.4	R122 138,71 – R104 227 ✓✓ = R17 911,71 ✓	1A Correct values 1M Subtraction: 1CA	(3)
1.1.5	122 138,71 ✓**:** 506 474 ✓ 1 **:** 4,15 ✓	2M Ratio of Correct Values 1A	(3)
1.1.6	R631,94 ✓✓	2RT	(2)
1.1.7	$\frac{R631,94}{110\%}$ ✓✓ = R574,49 ✓x 12 ✓ = R6 893,89 ✓ **OR** R631,94 x $\frac{\mathbf{10}}{\mathbf{110}}$ ✓ = R57,45 ✓ R631,94 – R57,45 ✓ = R574,49 x 12 ✓ = R6 893,89 ✓ **OR** $\frac{R631,94}{\mathbf{110}}$ X 100 ✓✓ = R574,49 ✓ x 12 ✓ = R6 893,89 ✓	1M Correct Values 1M dividing by 110% 1CA 1M x12 1CA (Accept 6893,88) 1M Multiplying by the fraction 1S 1M subtraction 1M Multiply by 12 1CA 1M Multiply 100 1M Denominator 1CA for R574,49 1M multiply by 12 1CA	(5)

1.2.1	$225 + $200 + $175 + $50 ✓✓ = $650	2A Adding all the values	(2)
1.2.2	$\frac{\$175}{\$650}$ x 100 ✓ = 26,9% ✓ = 27% ✓	1M dividing by $650 and multiply by 100 1CA 1CA	(3)
1.2.3	500 x $15,00 ✓ = $7 500 ✓	1M identifying 500 and $15,00 1A	(2)
1.2.4	7500 x 15,409095 ✓ = R115 568,2125 ✓ = R115 568,21 ✓	1M multiplying by R15,409095 1S 1 CA (two decimal places)	(3)
1.2.5	$\frac{\$200}{500}$ ✓ = $0,4 ✓	1M for 200 1CA	(2)
1.2.6	1 April 2016 – 30 April 2016 ✓✓	2 RT	(2)
			[34]

QUESTION 2			
Quest.	**Solution**	**Explanation**	**Marks**
2.1.1	$V = \pi r^2 h$ ✓ = 3,142 x (2,5 cm)^2 x 12,5 cm ✓ = 245,47 cm^3✓ ✓	1A converting radius 1SF 1CA answer 1 unit **NPR**	(4)
2.1.2	No. of candles $= \frac{5\,000\ cm^3}{245{,}47\ cm^3}$ ✓ = 20,4 ✓ = 20 candles ✓	1M for 5 000 1M 1CA answer	(3)
2.1.3	Candle weight = density x volume = 0,93g/cm^{-3} x 245,47 cm^3 ✓✓ = 228,29 g ✓	1SF 1M using 245,47 cm^3 1CA answer **NPR**	(3)
2.1.4	TSA = 2 x (2,6 x 2,8) + 2 x 6,1(2,6 + 2,8) ✓ = 2(7,28) + 12,2 x (5,4) ✓ = 14,56 cm^2 + 65,88 cm^2 ✓ = 80,44 cm^2 ✓ **OR** $TSA = 2x(l \text{ x } w) + 2(l \text{ x } h) + 2(w \text{ x } h)$ = 2(2,8 x 2,6) + 2(2,8 x 6,1) + 2(2,6 x 6,1) ✓✓ = 2(7,28) + 2(17,08) + 2(15,86) ✓ = 14,56 + 34,16 + 31,72 = 80,44 cm^2 ✓	1SF 1S 1S 1CA answer 2 SF 1S 1CA answer	(4)
2.1.5	Diameter = 2,5 × 2 = 5 cm ✓ No. of candles along the length = $\frac{15}{5} = 3$✓ No. of candles along the width = $\frac{15}{5} = 3$ ✓ Total number of candles for the first layer = 3 × 3 = 9 ✓	1M diameter 1M length candles 1M width candles 1CA Check 2.1.1 for radius	(4)
2.1.6	(a) 312°F ✓✓	2RD	(2)
	(b) ℃ = (312° − 32°) ÷ 1,8 ✓ = 280° ÷ 1,8 ✓ = 155,6 ℃ ✓ **Accept 155,56** ℃	1SF 1S 1A penalise if °F is written in the answer	(3)

2.2.1	2,3 m – 0,25 m ✓✓ = 2,05 m ✓	1M Conversion to metre 1M subtraction 1 CA answer	(3)
2.2.2	$A = l\ x\ w$ 12 m^2 = (2,3m +1,7m) x w ✓ $\frac{12\ m^2}{4\ m} = \frac{4\ m\ x\ w}{4\ m}$ ✓ 3 m = w	1M adding 1,7 1M dividing by 4 1A	(3)
			[29]
QUESTION 3			
3.1.1	North east ✓✓	2A	(2)
3.1.2	1 : 75 ✓✓	2RP	(2)
3.1.3	$Length = \frac{9\ cm\ x\ 75}{100}$ ✓ = 6,75 m✓ Width = 1,3 x 75 ÷ 100 = 0,975 m = 1 m ✓	1M 1A answer for length 1A answer for width	(3)
3.1.4	 ✓✓	2M Drawing	(2)
3.1.5	15 ✓✓	2RP	(2)
3.1.6	$\frac{7}{16}$ ✓ ✓	1M numerator 1M denominator	(2)
3.2.1	4 ✓✓	2RD	(2)
3.2.2	From the reception go straight along the orchard and turn right, ✓ then go down pass the playground and turn left✓and go straight you will get 11b. ✓	3RD	(3)
3.2.3	7 ✓✓	2RD	(2)
3.2.4	9 ✓✓	2RD	(2)
3.2.5	Table tennis **OR** Pool table ✓✓	2RD any facility	(2)
			[24]

QUESTION 4

Quest.	Solution	Explanation	Marks
4.1.1	Av weight = $\frac{92+94+96+98+102+108+110+112+115+116+117+120\times2+125}{14}$ ✓ $= \frac{1\,525}{14}$ ✓ = 108,93 kg ✓ (Accept 108,929)	1M 1S 1CA	(3)
4.1.2	1 569 ✓✓	2A	(2)
4.1.3	186 cm ✓✓	2A	(2)
4.1.4	<table><tr><th>Interval</th><th>Tally</th><th>Frequency</th></tr><tr><td>0– 30</td><td>/## /</td><td>6 ✓</td></tr><tr><td>31–60</td><td>/## /##</td><td>10 ✓</td></tr><tr><td>61–90</td><td>/## //</td><td>7 ✓</td></tr><tr><td>91–120</td><td>///</td><td>3 ✓</td></tr><tr><td>121–150</td><td>//</td><td>2 ✓</td></tr></table> 1 Mark (both Tally and Frequency) x 5 = 5	1 x 5 = 5	(5)
4.1.5	Probability is the chance or likelihood of an event happening. ✓✓	2M Definition	(2)
4.1.6	$\frac{4}{28} \times 100$ ✓ = 14,3% ✓	1 M Fraction multiply by 100 1CA	(2)
4.1.7	✓ 1 Mark per correctly plotted bar joined to an existing one 		

4.1.8	(a) 1 , 2 , 2 , 4 , 10 , 19 , 20 , 38 ✓ = $\frac{14}{2}$ ✓ = 7 ✓	1M Correct values 1M 1CA	(3)
	(b) Range = 64 ✓– 1 ✓ = 63 ✓	1Correct values 1M Subtracting 1A	(3)
	(c) Line graph ✓✓	2A	(2)
4.2.1	White ✓✓	2A	(2)
4.2.2	A = 41 000 938 +4 586 838 +4 615 401+1 286 930+280 454 ✓ = 51 770 561 ✓	1M Adding 1A	(2)
4.2.3	Whites and Coloureds ✓✓	2A	(2)
4.2.4	Indian / Asian ✓✓	2A	(2)
4.2.5	B + B+ 79,2 + 2,5 + 0,5 = 100%✓ = 100% – 82,2 2B = 17,8✓ B = 8,9%✓ **OR** $\frac{4\ 586\ 838}{51\ 770\ 561}$ ✓ x 100%✓ = 8,859 = 8,9% ✓ **OR** $\frac{4\ 615\ 5401}{51\ 770\ 561}$ ✓ x 100% ✓ = 8,915 = 8,9% ✓	1M Adding to make 100 1S value of 2B 1A 1M fraction with correct Values 1M multiply by 100 1A	(3)
			[40]

QUESTION 5			
Quest.	**Solution**	**Explanation**	**Marks**
5.1.1	Panado Medical Centre ✓✓	2RT	(2)
5.1.2	R24,46 ✓✓	2RT	(2)
5.1.3	R89,80 – 24,46✓ = R65,34 ✓	1M Subtraction 1A	(2)
5.1.4	R38,91 ✓✓	2RT	(2)

5.1.5	R24,46 +R309,70 + R108,49 +R38,91 +R13,10 + R5,02 ✓ = R499,68 ✓	1M Adding 1A	(2)
5.1.6	Pain located in other parts of the lower abdomen. ✓✓	2 RT	(2)
5.1.7	R13,10 x 14% ✓ = R1,83 + R13,10 ✓ = R14,93 ✓ **OR** R13,10 x 114% ✓✓ = R14,93 ✓	1M 1Adding 1A	(3)
5.1.8	60 days ✓ = 2 months ✓	1M 1CA (give a mark if answer is 30 days only)	(2)
5.2.1	Morning + Evening $(10\ m\ell + 15\ m\ell + 10\ m\ell + 10\ m\ell + 15\ m\ell + 10\ m\ell)$ ✓ = $70\ m\ell$✓ **OR** (10 $m\ell$ x 4) + (15 $m\ell$ x 2) ✓ = 40 $m\ell$ + 30 = 70 $m\ell$ ✓	1 M 1CA	(2)
5.2.2	$10\ m\ell + 10\ m\ell$ ✓ $= 20\ m\ell$ ✓ **OR** 10 $m\ell$ x 2 ✓ = 20 $m\ell$ ✓ **OR** 100 $m\ell$ – (20 $m\ell$ x 4) ✓ = 100 $m\ell$ – 80 $m\ell$ = 20 $m\ell$ ✓ **OR** 100 $m\ell$ – (10 $m\ell$ x 8) ✓ = 100 $m\ell$ – 80 $m\ell$ = 20 $m\ell$ ✓	1M 1A	(2)
5.3.	$\frac{60}{100}$ ✓ = $\frac{3}{5}$ ✓	2A	(2)
			[23]
		TOTAL:	**150**