Province of the
EASTERN CAPE
EDUCATION

NATIONAL
SENIOR CERTIFICATE

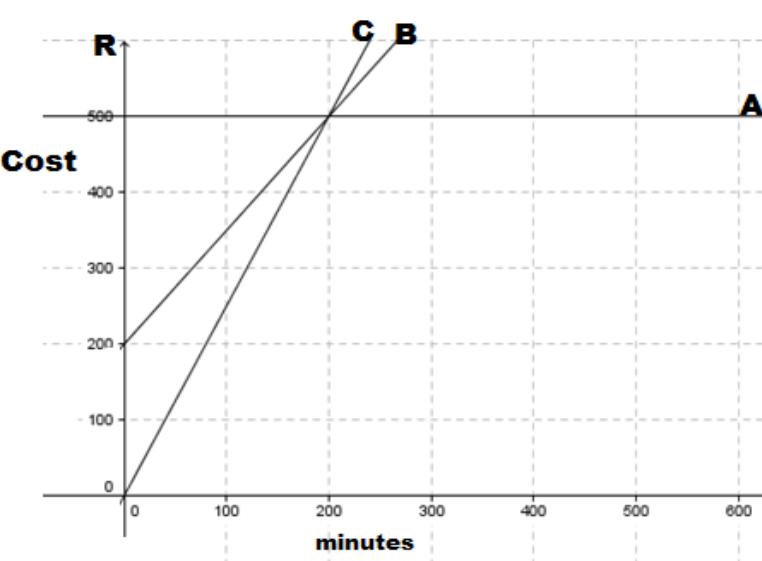**GRADE 12**

JUNE 2017

MATHEMATICAL LITERACY P1
MEMORANDUM

MARKS: 100

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.
S	Simplification
R	Rounding/Reason

This memorandum consists of 6 pages.

QUESTION 1 [28 Marks]

Quest	Solution	Explanation	Marks
1.1.1	p.a. means per annum ✓✓ **OR** annual earning	R	(2)
1.1.2	One million, two hundred eighty five thousand, four hundred and fifty six ✓✓	R	(2)
1.1.3	1 285 500 ✓✓	Rounding	(2)
1.2.1	Price of an egg $= \frac{17,99}{12} = 1,499$ ✓ $= R1,50$ ✓	1A for 12 1CA (2 dp. money)	(2)
1.2.2	VAT $= \frac{14}{100} \times 59,88$ ✓ $= R8,38$ ✓	1M Multiplication 1A (2 dp. for money)	(2)
1.2.3	$2,5 \times 1\,000 = 2\,500$ g ✓✓	1MA Multiplication 1A	(2)
1.2.4	$10\,m\ell \rightarrow 8g$ $150\,m\ell \rightarrow ?$ $? = \frac{150 \times 8}{10}$ ✓ $= 120\,g$ ✓	2M 1A	(2)
1.3	Juice: Water $= 1 : 5$ $10 : ??$ $?? = \frac{10 \times 5 ✓}{1} = 50$ glasses of water ✓	1M 1A	(2)
1.4	Length $= \frac{0,294}{0,01}$ ✓ $= 29,4$ cm ✓	1M division 1A	(2)
1.5.1	Number of boys $= 9 - 3$ $= 6$	1MA 1A	(2)
1.5.2	Range $= 13 - 3$ ✓ $= 10$ ✓	1MA 1A	(2)
1.6.1	Learners that took part in research $= 32$ ✓✓	2 RG	(2)
1.6.2	Formal dress code ✓✓	2 RG	(2)
1.6.3	Boys that preferred traditional dress code = $24 - 16$ ✓ $= 8$ ✓ **OR** counting from graph – 8 boys ✓✓	1M subtraction of the values 1CA **AO**	(2)
			[28]

Quest.	Solution	Explanation	Marks
QUESTION 2 [26 Marks]			
2.1.1	Profit for 2015 = Income – expenditure $\qquad$ = 262 600 – 188 560 ✓ $\qquad$ = 74 040 ✓	1MA subtraction 1A	(2)
2.1.2	Total expenditure in 2016 = 160 400 + 7 400 + 2 600 +10 400 + 360 + 7 200 +1 600 + 2 440 = 192 400 ✓ **OR** Total expenditure = Income – profit $\qquad$ = 318 860 – 126 460 ✓ $\qquad$ = 192 400 ✓	1M addition of $\quad$ expenses 1A 1M addition of $\quad$ expenses 1A	(2)
2.1.3	Depreciation increased by 50% ✓✓	2RT	(2)
2.1.4	$\% \ increase \ in \ salaries = \dfrac{increase \ in \ salaries}{salaries \ in \ 2015} \times 100$ $= \dfrac{160\ 400 - 160\ 000}{160\ 000} \times 100$ ✓ $= \dfrac{400}{160\ 000} \times 100 = 0{,}25\%$ ✓	1SF 1A	(2)
2.2.1	Minutes (time) ✓✓	2RT	(2)
2.2.2	**GRAPH SHOWING CELLEPHONE DEALS OPTIONS: A; B; C** Point (0; 500), another point on line cost = 500 ✓ line cost = 500 ✓		(3)

2.2.3	Same cost for all the options. ✓✓ **OR** None is cheaper. ✓✓	2RG	(2)
2.2.4	$P(C) = \frac{1}{3}$ ✓✓	1 numerator 1 denominator (Answer only full marks)	(2)
2.3.1	Cost of paraffin = $5,60 \times 3$ ✓ = R16,80 ✓	1MA Multiplication 1A	(2)
2.3.2	$P = 5,60 \times 1,1$ ✓✓ = R6,16 ✓ **OR** $P = 5,60 \times \frac{110}{100}$ ✓✓ = R6,16 ✓ **OR** Increase = $5,60 \times 10\%$ = R0,56 ✓ $P = 5,60 + 0,56$ ✓ = R6,16 ✓	2 MA Multiplication 1A 1MA for the increase 1M addition 1A	(3)
2.3.3	No. of tanks = $\frac{30}{2} = 15$ ✓ Cost = $15 \times 3 \times 6,16$ ✓ = R277,20 ✓	1A for 15 1M Multiplication 1CA	(3)
			[26]

QUESTION 3 [13 Marks]

Quest.	Solution	Explanation	Marks
3.1.1	Perimeter = 8×500 ✓ = $4\ 000 \div 100$ ✓ = 40 m ✓	1M multiplication 1M dividing by 100 1CA	(3)
3.1.2	$A = 3,142 \times 25^2$ ✓ = $1\ 963,75\ cm^2$ ✓	1S radius and 3,142 1A (-1 for using calculator pi)	(2)
3.1.3	Area of the rectangle = $\frac{1}{5}\ th$ of the area of the sign post Type 2 = $\frac{1}{5} \times 196\ 3,75$ ✓ = $392,75\ cm^2$ ✓	1S (Area from 3.1.2) 1CA	(2)
3.2.1	$V = \pi r^2 h$ h = 20 cm r = 10 cm ✓ $V = 3,142 \times 10^2 \times 20$ ✓ $V = 6\ 284\ cm^3$ ✓	1A (r = 10 cm) 1SF 1S 1CA	(3)

3.2.2	$\begin{aligned}&\textit{Number of sign posts}\\ &= \frac{2 \times \textit{Volume of the paint}}{(\textit{Area of sign post Type 2} - \textit{area of enclosed rectangle})}\\ \\ &= \frac{2 \times 6284}{(1\,963,75-392,75)} \checkmark\checkmark\\ &= \quad 8 \checkmark\end{aligned}$	1SF 1S simplification 1CA	 (3)
			[13]

QUESTION 4 [16 Marks]

Quest	Solution	Explanation	Marks
4.1.1	A ✓✓	2R	(2)
4.1.2	Allow any value between 85 – 90 km ✓✓	2 RM	(2)
4.1.3	Highest point: UMLAAS RD ✓✓	2 RM	(2)
4.1.4	$\text{Speed} = \frac{Distance}{time} = \frac{85}{12} = 7,08$ km/h $\quad\quad\quad = \frac{90}{12} = 7,5$ km/h Allow answer between (7,08 – 7,5) km/h ✓	1S 1CA 1A unit (km/h)	 (3)

4.2.1	Distance Cape Town to Durban
	  1 : 16 000 000
	70 mm : 16 000 000 x 70 mm ✓
	Distance = 16 000 000 x 70 ÷1000 000 ✓
	     =1 120 km ✓
		1M multiplication
		1M division
		
		1A (with units)
			
			(3)

4.2.2	NW/*North West* ✓✓	2 Reading Map	(2)
4.2.3	8 ✓✓	2 Reading Map	(2)
			[16]

QUESTION 5 [17 Marks]

Quest.		Solution	Explanation	Marks
5.1	5.1.1	Bar graph ✓✓	2 RG	(2)
	5.1.2	Ascending order 2,4; 2,4; 5,6; 9,7; 14,8; 17,4; 19, 7; 28, 0; 28,4; 31,6; 36,0 ✓	1M order 1M middle value	
		Median = 17,4 ✓	2M middle values	(2)
	5.1.3	Mean $=$ $\dfrac{2.3+0.7+5.1+17.3+25.6+28.8+15.8+13.4+15.5+5.5+4.6}{11}$ ✓ $=\dfrac{134.6}{11}$ ✓ $= 12,24$ ✓	M1 Addition 1M division by 11 1A	(3)
	5.1.4	The male age groups that have more than the upper quartile are 30–34: ✓✓ and 35–39 ✓ (36% and 28,8%)	2 RG (Allocate 1 mark if % is given instead of age groups)	(3)
5.2	5.2.1	10 260 829 + 461 934 + 713 856+ 2 063 128 + 2 315 279+49 277 + 377 231+271 895 + 409 881= 16 923 309 ✓✓	1M addition 1A	(2)
	5.2.2	Value of B = $\dfrac{1\,266\,102}{14\,450\,161}$ x 100 ✓ = 8,76 = 8,8% ✓ **OR** Value of B = 100% – (57,0 + 3,1 +2,5 + 19,3 + 2,1 + 2,1 + 5,2) ✓ = 8,8% ✓	1MA 1A 1M (100 – the total of the other %) CA	(2)
	5.2.3	P(flush toilet) = (60,6% + 2,7%) ✓✓ = 63,3% ✓ **OR** P(flush toilet) = $\dfrac{total\ with\ flush\ toilet}{total\ of\ survey}$ $= \dfrac{10\,722\,763\ ✓}{16\,923\,309} \times 100$ ✓ $= 63,4\%$ ✓	1M 1S 1A 1SF (numerator and denominator) 1M multiplication with100 1CA	(3)
				[17]
			TOTAL:	**100**