

**MATHEMATICAL LITERACY P1**

**COMMON TEST – JUNE 2014**

**MEMORANDUM**

**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 12**

SYMBOL	EXPLANATION
M	Method
MA	Method with accuracy
CA	Consistent accuracy
A	Accuracy
C	Conversion
S	Simplification
RT/RG	Reading from the table/ reading from the graph
SF	Substitution in the formula
O	Opinion
R	Rounding off
F	deriving a formula

**MARKS: 100**

**This memorandum consists of 6 pages and 1 annexure.**

**QUESTION 1**

Solution	Explanation	Topic
1.1 (a) $\frac{12}{6} : \frac{18}{6} \checkmark$ $= 2 : 3 \checkmark$ (b) $2 : 3$ $2 + 3 = 5 \checkmark$ $R2\ 600 \div 5 = R520 \checkmark$ Mandy received $3 \times R520 = R1\ 560 \checkmark$ <b>OR</b> $\frac{3}{5} \times R2\ 600 = R1\ 560$	1M method 1A answer (2)  1M method 1A for R520 1A answer (3)	Finance  Finance
1.2 $8\text{ km} \times 1\ 000 = 8\ 000\text{ m} \checkmark$ $8\ 000\text{ m} \times 100 = 800\ 000\text{cm} \checkmark$	1M multiplication 1A answer (2)	Measurement
1.3 $R2,85 \times 12 = R34,20 \checkmark \checkmark$	1M multiplication 1A correct answer (2)	Finance
1.4 (a) Price excluding VAT = $\frac{R7\ 999}{1,14} \checkmark \checkmark$ $= R7\ 016,67 \checkmark$ <b>OR</b> $\frac{R7\ 999}{114} \times 100 = R7\ 016,67$	2M method 1A answer (3)	Finance
1.5 $\begin{array}{lcl} \text{£ } 1 & = & R16,20 \\ x & = & R8\ 550 \\ \hline R16,20x & = & R8\ 550 \checkmark \checkmark \\ R16,20 & = & R16\ 20 \\ x & = & \text{£ } 527,78 \checkmark \end{array}$	2M method 1A answer (3)	Finance
1.6 No. of taxis = $\frac{245}{15} \checkmark$ $= 16,33\text{ taxis} \checkmark$ $\approx 17\text{ taxis} \checkmark$ Company's earnings = $17 \times R120 \checkmark$ $= R2\ 040 \checkmark$	1M dividing 1A answer 1R rounding  1A Method 1A answer (5)	Measurement
<b>[ 20 ]</b>		

<b>QUESTION 2</b>		
2.1.1 Transport expenses = $\frac{R1\ 500}{R13\ 239} \times 100 \checkmark$ $= 11,33\% \checkmark$	1M method 1A answer (2)	Finance
2.1.2 $R1\ 500 + \left(\frac{3}{100} \times R1\ 500\right) \checkmark$ $= R1\ 545 \checkmark$	1M adding the increase 1A answer (2)	Finance
2.1.3 Annual salary = $R23\ 000 \times 13 \checkmark$ $= R299\ 000 \checkmark$	1M multiplying by 13 1A answer (2)	Finance
2.1.4 Tax bracket 2  Annual tax = 55 957 + 30% of the amount above R272 700 $\checkmark$ $= R55\ 957 + (30\% \times R3\ 300) \checkmark$ $= R55\ 957 + R990 \checkmark^{CA}$ $= R56\ 947 - R12\ 726 \checkmark^{CA}$ $= R44\ 221$  Monthly tax = $R44\ 221 \div 12 \text{ months} \checkmark^{CA}$ $= R3\ 685,08 \checkmark^{CA}$	1M identifying correct bracket  1M – difference (R3300)  1M subtracting rebates  1M dividing answer by 12 1A answer (6)	Finance
2.2 milk = $2 \times 250 \text{ m}\ell = 500 \text{ m}\ell \checkmark$  melted butter $2 \times 15 \text{ m}\ell = 30 \text{ m}\ell \checkmark$  lemon juice $\frac{2}{5} \times 250 \text{ m}\ell = 100 \text{ m}\ell \checkmark$  Condensed milk = $\frac{4}{5} \times 250 \text{ m}\ell = 200 \text{ m}\ell \checkmark$  Total = 830 mℓ  The jug will be large enough	1A answer  1A answer  1A answer  1A answer  1O Opinion (5)	Measurement
<b>[17]</b>		

<b>QUESTION 3</b>			
3.1.1	$A = R1\,000 \checkmark \checkmark$ $B = R1\,000 \checkmark \checkmark$	2A correct value 2A correct value (4)	Finance
3.1.2	Cost BCH = $R200 + R2,00 \times$ no. of kilometres travelled $\checkmark \checkmark$	2A correct equation (2)	Finance
3.1.3	Cost JCH = $R2,50 \times$ no. of kilometres travelled $\checkmark \checkmark$	2A correct equation (2)	Finance
3.1.4	Graph ( <b>Annexure A</b> )	2 marks for correct label 1 mark for starting at R200 1 mark for any two correct points 1 mark for joining points (5)	Finance
3.1.5	400 km $\checkmark \checkmark$	2A answer (2)	Measurement
3.1.6	Return trip = $R2,50 \times 800$ km $\checkmark$ Fuel cost = $R2\,000 \checkmark$ = $800 \text{ km} \div 72 \text{ km} \checkmark$ = $11,11 \times R100 \checkmark$ = $R1\,111,11 \checkmark$ Total cost = $R2\,000 + 1\,111,11$ = $R3\,111,11 \checkmark$	1M multiplying OR full mark for R2000 1A answer 1M/CA division 1M/CA multiplying by 100 1CA answer 1CA total (6)	Finance
3.2	(a) Number of blue cars = $30 - (15 + 5 + 6) \checkmark$ $P(\text{b car}) = \frac{4}{30} \text{ OR } \frac{2}{15} \text{ OR } 0,13 \checkmark$ = $13,33\% \checkmark$ (b) $P(\text{white car}) = \frac{15 \checkmark \checkmark}{30} = \frac{1}{2} = 0,5$ OR $50\% \checkmark \checkmark$	1M subtracting 1A concept of probability 1A % (3) 2A answer (2)	Probability Probability
			<b>[26]</b>

<b>QUESTION 4</b>		
<p>4.1 (a) length of the farm: 1 cm : 200 m</p> $\begin{array}{l l} 12,5 \text{ cm} : x \checkmark & 12,5 \times 200 \\ x = 2\,500 \text{ m} \checkmark & = 2\,500 \text{ m} \checkmark \end{array}$ <p>(b) Breadth of the farm: 1 cm : 200 m</p> $\begin{array}{l l} 9 \text{ cm} : x \checkmark & 9 \times 200 \\ \text{OR} & \\ x = 1800 \text{ m} \checkmark & = 1800 \text{ m} \end{array}$	<p>1M method</p> <p>1A answer (2)</p> <p>1M method</p> <p>1A answer (2)</p>	Measurement
<p>4.2 Area of the farm = <math>\ell \times b</math></p> $\begin{array}{l l} = 2\,500 \text{ m} \times 1\,800 \text{ m} (\div 1000) \checkmark & \text{OR } 2500 \times 1800 \\ = 2,5 \text{ km} \times 1,8 \text{ km} \checkmark & = 4500\,000 \\ = 4,5 \text{ km}^2 \checkmark & = 4,5 \text{ km}^2 \end{array}$	<p>1SF substitution</p> <p>1A conversion</p> <p>1A answer (3)</p>	Measurement
<p>4.3 Distance = 2 cm + 1,5 cm + 3 cm + 1 cm = 7,5 cm ✓</p> $\begin{array}{l l} 1 \text{ cm} : 200 \text{ m} & \text{OR } 7,5 \checkmark \times 200 \\ 7,5 \text{ cm} : x & = 1500 \\ x = 1\,500 \text{ m} \div 1\,000 \checkmark & = \frac{1500}{1000} \\ = 1,5 \text{ km} \checkmark & 1,5 \text{ km} \end{array}$	<p>1C conversion</p> <p>1A answer (2)</p>	Measurement
<p>4.4 North west ✓✓</p>	<p>2A answer (2)</p>	Measurement
<p>4.5 V cylinder = <math>\pi r^2 h</math></p> <p>Diameter = 600 cm <math>\div 100 = 6</math> metres ✓</p> <p>Radius = 6 metres <math>\div 2 = 3</math> metres ✓</p> <p style="text-align: center;"><b>OR</b></p> <p>Radius = 300 cm <math>\div 100 = 3</math> m</p> $\begin{array}{l} = 3,142 \times (3 \text{ m})^2 \times 40 \checkmark \\ = 1\,131,12 \text{ m}^3 \checkmark \end{array}$	<p>1 C for conversion</p> <p>1A finding the radius</p> <p>1 Substitution</p> <p>1A answer (4)</p> <p style="text-align: right;"><b>[15]</b></p>	Measurement

<b>QUESTION 5</b>			
5.1	Minimum = 40 ✓ Q1 = 51 ✓ Q2 or Median = 57,5 ✓✓ Q3 = 66,5 ✓ Maximum = 85 ✓	1A minimum 1A Q1 2A Q2 1A Q3 1A Maximum (6)	Data Handling
5.2	Mean = $1181 \div 20$ ✓ = 59,05 ✓	1M method 1A answer (2)	Data Handling
5.3	Mode = 55 ✓✓	2A answer (2)	Data Handling
5.4	Range = 85 - 40 ✓ = 45 ✓	1M subtracting 1A answer (2)	Data Handling
5.5	IQR = Q3 - Q1 ✓ = 66,5 - 51 ✓ = 15,5 ✓	1M Q3 - Q1 1CA substitution 1CA answer (3)	Data Handling
5.6.1	A – Minimum 51 ✓ B – Q1 / first quartile / lower quartile 55 ✓ C – Q2 / Median / second quartile 64 ✓ D – Q3 / third quartile / upper quartile 75 ✓ E - Maximum 80 ✓	1A for each correct label and value (5)	Data Handling
5.6.2	Range for Tourism = 80 - 51 ✓ = 29 ✓	1M method 1A answer (2) <b>[22]</b>	Data Handling

**TOTAL: [100]**

**ANNEXURE A****Graph showing Billy's and Joe's car rental costs**