

**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 12**

**JUNE 2018**

**MATHEMATICAL LITERACY P1  
MARKING GUIDELINE**

**MARKS: 100**

<b>SYMBOL</b>	<b>EXPLANATION</b>
A	Accuracy
CA	Consistent accuracy
C	Conversion
J	Justification (Reason/Opinion)
M	Method
MA	Method with accuracy
P	Penalty for no units, incorrect rounding off, etc.
R	Rounding off
RT/RG/RP RM/RD	Reading from a table/Reading from a graph/Reading from a plan/Reading from a map/Reading from a diagram
S	Simplification
SF	Correct substitution in a formula
O	Own opinion
NPR	No penalty for rounding

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This marking guideline consists of 8 pages.

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QUESTION 1 [20 marks]		Explanation	Marks
1.1.1	Cost for deposit = $1,50 + \frac{0,25}{100} \times 2\,000 \checkmark = 1,5 + 5 \text{ MA}$ $= R6,50 \checkmark \text{ CA}$	1 MA (0,25% of 2 000) 1 CA	L1 (2)
1.1.2	Minimum = R2,00 $\checkmark \checkmark$	2 RT	L1 (2)
1.2.1	A = $231,70 - (23,45 + 90 + 23 + 45) \checkmark \text{ MA}$ $= 50,25 \checkmark \text{ CA}$	1 MA Subtracting values from 231,70 1 CA Value of A	L1 (2)
1.2.2	Cost of total data used = $\frac{231,7}{1\,000} \times 149 \checkmark \text{ MA}$ $= R34,52 \checkmark \text{ CA}$ <b>OR</b> Cost of total data used = $\frac{149}{1\,000} \times 231,7 \checkmark \text{ MA}$ $= R34,52 \checkmark \text{ CA}$	1 MA Total data as a fraction of 1GB $\times 149$ 1 CA Cost NPR	L1 (2)
1.3.1	Seat 20B $\checkmark \checkmark$ RT	2 RT Seat number	L1 (2)
1.3.2	Time for the flight = $13:30 - 12:05 \checkmark \text{ MA}$ $= 1\text{hr } 25 \text{ min } \checkmark \text{ A}$	1 MA Subtracting the times 1 A 1 : 25 is incorrect	L1 (2)
1.4.1	Bar scale / Graphic scale $\checkmark \text{ A}$ Linear scale $\checkmark \text{ A}$ Word scale $\checkmark \text{ A}$ Fractional or ratio scale $\checkmark \text{ A}$	2 A for any two scales given	L1 (2)
1.4.2	For every one unit on a drawing or on a map there are 400 000 units in reality $\checkmark \checkmark \text{ A}$	2 A Explanation	L1 (2)
1.5.1	Others $= 2\,100\,000 - (503\,096 + 439\,719 + 221\,121 + 219\,007) \checkmark \text{ MA}$ $= 717\,057 \checkmark \text{ CA}$	1 MA Subtracting the total from 2,1 million 1 CA	L1 (2)
1.5.2	Health % of the total = $\frac{221\,121}{2\,100\,000} \times 100 \checkmark \text{ MA}$ $= 10,53\% \checkmark \text{ CA}$	1 MA Fraction of correct values $\times 100\%$ 1 CA NPR	L1 (2)
			<b>[20]</b>

QUESTION 2 [27 marks]		Explanation	Marks
2.1	$\text{Inflation Rate} = \frac{369,50 - 343}{343} \times 100 \checkmark \text{ SF}$ $= \frac{26,50}{343} \times 100 \checkmark \text{ S}$ $= 7,73\% \checkmark \text{ CA}$	1 SF  1 S  1 CA NPR	L2   (3)
2.2.1	$\text{Original Salary} = \frac{25\,750}{1,085} \checkmark \checkmark \text{ MA}$ $= \text{R}23\,732,72 \checkmark \text{ CA}$	1 A Correct value 25 750 1 M divided by 1,085 1 CA	L2   (3)
2.2.2	$\text{Annual Salary} = 25\,750 \times 12 \checkmark \text{ MA}$ $= \text{R}309\,000 \checkmark \text{ A}$	1 MA Multiplication of correct values 1 CA	L1   (2)
2.3.1	$D = \frac{2\,500}{50} \checkmark \text{ MA} = 50 \text{ tickets} \checkmark \text{ A}$	1 MA Division of correct values 1 CA	L1   (2)
2.3.2	Cost of renting = R3 600 $\checkmark \checkmark$	Reading from given information 2 A	L1   (2)

2.3.3		1 A 1 <sup>st</sup> point 1 A Line drawn	L2 (2)
	<p style="text-align: center;"><b>Income and Cost graph</b></p> <p style="text-align: center;"><b>Number of tickets sold</b></p>		
2.3.4	<p>From graph = Expense line above income = Difference R600 ✓✓ RG = Loss ✓ O</p> <p style="text-align: center;"><b>OR</b></p> <p>Difference = Income – expense = (60 x 50) – 3600 ✓ M = -600 ✓ S = Loss ✓ O</p>	<p>2 RG</p> <p>1 O</p> <p>1 M</p> <p>Subtraction of expense from income correct value</p> <p>1 S</p> <p>1 O</p>	L3 (3)
2.3.5	<p>Break-even is the point where cost of renting equals income ✓✓ A (J)</p> <p style="text-align: center;"><b>OR</b></p> <p>No loss and no profit</p>	<p>2 A</p> <p>Explanation</p>	L1 (2)
2.4	<p>Rent with VAT = 3 600</p> <p>Rent without VAT = <math>\frac{3\,600}{1.15} = R3\,130,43</math> ✓ M</p> <p>VAT = 3 600 – 3 130,43 ✓ M</p> <p>= R469,57 ✓ CA</p> <p style="text-align: center;"><b>OR</b></p> <p>VAT = <math>\frac{15}{115}</math> ✓ MA × 3600 ✓ M</p> <p>= R469,57 ✓ CA</p>	<p>1 MA Divide by 1,15</p> <p>1 M Subtraction</p> <p>1 CA</p> <p>1 MA Fraction</p> <p>1 M Multiplication</p> <p>1 CA</p>	L3 (3)

2.5.1	$R1 = 0,46406 \text{ CYN}$ $? = 1\,250$ $? = \frac{1\,250}{0,46406} \checkmark \text{ MA}$ $= R2\,693,62 \checkmark \text{ A}$	1 MA Division using correct values  1A	L2   (2)
2.5.2	Total parts $2 + 3 = 5 \checkmark \text{ MA}$ Value of each part $= \frac{2694}{5} = R538,80 \checkmark \text{ S}$ Wife has one part more; she got $R538,80 \checkmark \text{ CA more}$ <b>OR</b> Total parts $= 5 \checkmark \text{ MA}$ Wife got $= \frac{3}{5} \times 2\,694 = R1\,616,40$ Husband got $= \frac{2}{5} \times 2\,694 = R1\,077,60$ Wife got $1\,616,40 - 1\,077,60 \checkmark \text{ MA} = R538,80 \checkmark \text{ CA more}$ <b>OR</b> Total parts $2 + 3 = 5 \checkmark \text{ MA}$ Value of each part $= \frac{1250}{5} = \text{CYN } 250 \checkmark \text{ S}$ Wife has one part more; she got $\text{CYN } 250 \checkmark \text{ CA more}$	1 MA value of 5 1 S 1 CA  1 MA value of 5 1 Subtraction 1 CA  (Allow if calculated in Chinese Yuan) 1 MA value of 5 1 S 1 CA	L2          (3) <b>[27]</b>

QUESTION 3 [16 marks]		Explanation	Marks
3.1	1,8 m ✓✓ RD <div style="text-align: center;"><b>OR</b></div> $\text{Radius} = \frac{3,6}{2} \checkmark \text{ M}$ $= 1,8 \text{ m } \checkmark \text{ A}$	2 RD 1 M Divide by 2 1 A	L1  (2)
3.2	$C = \pi r$ $C = 3,142 \times 1,8 \text{ m } \checkmark$ $= 5,66 \text{ m } \checkmark$ <div style="text-align: center;"><b>OR</b></div> $C = 3,142 \times (3,6 \text{ m}) \div 2 \checkmark$ $= 5,66 \text{ m } \checkmark$	1 SF 1 CA from 3.1  1 SF 1 CA NPR	L2  (2)
3.3	$A + A + A + 0,4 \text{ m} + 1,1 \text{ m} + 1,75 \text{ m} = 5,8 \text{ M } \checkmark$ $3A + 3,25 \text{ m} = 5,8 \text{ m}$ $3A = 5,8 \text{ m} - 3,25 \text{ m } \checkmark \text{ S}$ $\frac{3A}{3} = \frac{2,55 \text{ m}}{3} \checkmark \text{ M/A}$ $A = 0,85 \text{ m } \checkmark \text{ CA}$	1 M Addition 1 S 1 M/A Division 1 CA	L1  (4)
3.4	$TA = \pi r^2 + (\text{length} \times \text{breadth}) \times 2$ $= 3,142 \times 1,8^2 + (5,8 \text{ m} \times 4,9 \text{ m}) \times 2 \checkmark \checkmark$ $= 10,18008 \text{ m}^2 + 28,42 \text{ m}^2 \times 2 \checkmark$ $= 10,18008 \text{ m}^2 + 56,84 \text{ m}^2$ $= 67,02 \text{ m}^2 \checkmark$ $= 67 \text{ m}^2 \checkmark$	CA from 3.1  2 SF  1 S 1 CA 1 Rounding off	L2  (5)
3.5	$5,8 \text{ m} + 1,8 \text{ m}$ $= 7,6 \text{ m } \checkmark \times 2 \checkmark$ $= 15,2 \text{ m } \checkmark$	1 M Adding (Value 7,6 m) 1 M (Multiplication by 2) 1 CA	L2  (3)
			<b>[16]</b>

QUESTION 4 [11 marks]		Explanation	Marks
4.1	16 ✓✓ RD	2 RD	L1 (2)
4.2	(a) AA = 48 ✓✓ A	2 A Number	L1 (2)
	(b) BB = 65 ✓✓ A	2 A Number	L1 (2)
4.3	Q 5 ✓✓ RD	2 RD Award 1 mark for 5Q	L1 (2)
4.4	Turn it over once in a clockwise direction in such a way that the left side is now the top side, the bottom side is now the left side and the top side is now the right-hand side. ✓✓ ✓	3 A Explanation	L2 (3)
			<b>[11]</b>

QUESTION 5 [26 marks]		Explanation	Marks
5.1.1	18 ✓✓ RM	2 A RM Total number of data values	L1 (2)
5.1.2	Willowmore ✓ RM Port Elizabeth ✓ RM East London ✓ RM Aliwal North ✓ RM	4 A RM (1 Mark for each town or city)	L1 (4)
5.1.3	14; 14; 15; 15; 15; 16; 16; 17; 17; 17; 17 ✓✓ RM	2 A RM Arranged in ascending order	L1 (2)
5.1.4	16 ✓✓ CA	2 CA From 5.1.3 Median	L2 (2)
5.1.5	$Q_1 = 15$ ✓ A and $Q_3 = 17$ ✓ A Interquartile range = $17 - 15$ ✓ 1 M = 2 ✓ CA	2 MA for $Q_1$ and $Q_3$ 1 M subtraction 1 CA	L2 (4)
5.1.6	Mean = $\frac{16+18+21+22+27+28+28}{7} = \frac{160}{7}$ ✓✓ MA  = 22,86 = 23 ✓ A	2 MA For addition and division 1 CA NPR	L2 (3)
5.1.7	28 ✓✓ RM	2 RM	L2 (2)
5.1.8	Difference = $28 - 17$ ✓ MA = 11 ✓ CA	1 MA Subtraction 1 CA	L1 (2)
5.2.1	Probability is the chances of an event to happen ✓✓	2 A Explanation	L1 (2)
5.2.2	P (City or town with temperature less than $17^{\circ}\text{C}$ ) $= \frac{8}{18}$ ✓✓ = $\frac{4}{9}$	1 A for 8 the numerator 1 CA From 5.1.1 1 A NPR	L2 (3)
			[26]
TOTAL:			100