



Education and Sport Development

Department of Education and Sport Development
Departement van Onderwys en Sportontwikkeling
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NORTH WEST PROVINCE

NATIONAL SENIOR CERTIFICATE

GRADE 12

MATHEMATICAL LITERACY P1

SEPTEMBER 2019

MARKING GUIDELINES

These marking guidelines consist of 11 pages.

Codes	Explanation
M	Method
MA	Method with Accuracy
CA	Consistent Accuracy
A	Accuracy
C	Conversion
D	Define
J	Justification / Reason / Explain
S	Simplification
RT / RD / RG	Reading from a table OR a graph OR a diagram OR a map OR a plan
F	Choosing the correct formula
SF	Substitution in a formula
O	Opinion
P	Penalty, e.g. for no units, incorrect rounding-off, etc.
R	Rounding-off
NP	No penalty for rounding-off OR omitting units

KEY TO TOPIC SYMBOL:

**F = Finance; M = Measurement; MP = Maps, Plans and other representations;
DH = Data Handling; P = Probability**

QUESTION 1**Answer only, full marks.****NPR**

Q	Answer	Explanation	Level
1.1.1	Bar Graph ✓✓O	2O correct type of graph (2)	DH1
1.1.2	Total budget per month = R6 000 + R2 500 + R2 500 + R1 400 + R3 000 + R4 000 + R2 500 + R3 000 ✓RT = R24 900 ✓A	1RT reading all correct values 1A total budget (2)	F1
1.1.3	R6 000; R4 000; R3 000; R3 000; R2 500; R2 500; R2 500; R1 400 ✓✓A	2A All values in the correct order. (2)	DH1
1.1.4	12 mm ✓✓A	2A for correct measurement in mm Measure on final copy (2)	M1
1.1.5	Total nett income = R11 335 + R14 363 ✓M = R25 698 ✓A	1M for adding correct values 1A total net income (2)	F1
1.1.6	Income received after deductions ✓✓A OR Take home pay OR Gross income ñ Deductions	2A income after deductions (2)	F1
1.2.1	Value Added Tax ✓✓A	2A Value Added Tax (2)	F1
1.2.2	VAT = R1 999 × 15% ✓M = R299,85 ✓A	1M for multiplying by 15% 1A calculating VAT (2)	F1
1.2.3	One unit on the picture / diagram represents fifty units in reality ✓✓O	2O for correct wording (2)	MP1
1.2.4	4 wheels ✓✓A	2A correct number of wheels (2)	M1
1.2.5	The price at which the shop sells a product / bag to the public / customers. ✓✓O	2O correct definition in context (2)	F1

Q	Answer	Explanation	Level
1.3.1	One million six hundred and fifty-nine thousand seven hundred and ninety-three. ✓✓O	2O correct wording (2)	1DH
1.3.2	KwaZulu-Natal ✓✓RT	2RT correct province (2)	1DH
1.3.3	Number of visitors = $1\,659\,793 \times 40\%$ ✓M = 663 917,2 = 663 917 ✓A	1M for multiplying by 40% 1A number of visitors (2)	1DH
1.3.4	20% : 10% ✓M 2 : 1 ✓S	1M correct percentages in correct order 1S for simplification (2)	1DH
1.3.5	0% ✓✓A	2A correct probability (2)	1P
			[32]

QUESTION 2

Q	Answer	Explanation	Level
2.1.1	Happy Life Street ✓✓RT	2RT correct street name (2)	F1
2.1.2	Number of days = 14 days + 17 days ✓M = 31 days ✓CA	1M for adding correct values 1CA for number of days (2)	F1
2.1.3	Number of instalments paid = 72 ÷ 28 ✓MA = 44 ✓A	1MA subtracting correct values 1A for number of instalments (2)	F1
2.1.4	✓RT $\text{VAT} = \text{R}57,50 \times \frac{15}{115} \quad \checkmark\text{M}$ $= \text{R}7,50 \quad \checkmark\text{CA}$ OR $\text{VAT} = \text{R}57,50 \times \frac{222}{222}$ $= \text{R}50,00$ $\text{R}57,50 - \text{R}50,00 = \text{R}7,50$ OR $\frac{\text{R}57,50}{1,15} = \text{R}50,00$ $\text{R}57,50 - \text{R}50,00 = \text{R}7,50$	1RT for R57,50 1M for multiplying by $\frac{15}{115}$ or $\frac{222}{222}$ or dividing by 1,15 1CA VAT value (3)	F2
2.1.5	✓RT ✓M $\text{R}70\,646,51 + \text{R}703,72$ $= \text{R}71\,350,23$ OR $\text{R}73\,613,74 - \text{R}2\,967,23 + \text{R}703,72$ $= \text{R}71\,350,23$	1RT correct values 1M adding correct values (2)	F1
2.1.6	Total amount ✓RT $= 72 \times \text{R}2\,967,23 \quad \checkmark\text{M}$ $= \text{R}213\,640,56 \quad \checkmark\text{CA}$	1RT correct values from table 1M multiplying value by 72 1CA total amount (3)	F2

Q	Answer	Explanation	Level
2.1.7	Money saved ✓RT = R213 640,56 ñ R151 140 ✓M = R62 500,56 ✓CA	CA from Q2.1.6 1RT correct value 1M subtracting correct values 1CA amount of money saved (3)	F2
2.2.1	✓O Money received especially on a regular basis for work or through investments ✓O	1O money received 1O for work or investments (2)	F1
2.2.2	✓A ✓A Income = R45 × number of cars washed	1A R45 1A number of cars (2)	F1
2.2.3	Direct ✓A As the one value increases, the other value increases. ✓O	1A Direct 1O correct reason (2)	F1
2.2.4	$A = \frac{R1\ 170}{20}$ ✓M = 26 ✓CA B = R45 × 20 ✓M = R900,00 ✓CA	1M for dividing by 45 1CA answer 1M for multiplying by 20 1CA answer (4)	F2
2.2.5	Total income = R495 + R765 + R1 170 + R1 485 + R900 + R1 260 ✓M = R6 075 ✓CA	1M adding all correct values 1CA total income (2)	F1
2.3.1	R10 000 + R10 000 = R20 000 ✓ A $= \frac{2000\ 000}{4,438}$ ✓ MA = 45 662,10 Thai baht ✓ A	1 A correct total spending 1 MA diving by 0,438 1 A correct final answer (3)	F1
2.3.2	$15\ 000 \times \frac{2,2}{200} \times 2$ ✓SF = R1 170 × 2 = R2 340 (interest) ✓A = R15 000 + R2 340 ✓M = R17 340 ✓CA	1 SF substituting into formula 1 A answer of interest 1 M adding 1 CA final amount (4)	F1
2.3.3	7 × 3 × 2 × R12 ✓✓MA = R504,00 ✓A	2 MA calculating total 1 A final amount (3)	F3
			[39]

QUESTION 3

Q	Answer	Explanation	Level
3.1.1	Radius = $67 \text{ mm} \div 2$ ✓M = $33,5 \text{ mm}$ ✓A	1M dividing by 2 1A radius (2)	M1
3.1.2	Volume of cylinder = $\pi \times \text{radius} \times \text{radius} \times \text{height}$ = $3,142 \times 33,5 \times 33,5 \times 60$ ✓✓SF = $211\,566,57 \text{ mm}^3$ ✓CA	1SF substituting radius from Q.3.1.1 1SF substituting height 1CA for volume (3)	M2
3.1.3	Total surface area = side $\times$ side $\times$ 6 ✓RT = $57 \text{ mm} \times 57 \text{ mm} \times 6$ ✓SF = $19\,494 \text{ mm}^2$ ✓CA	1RT correct values 1SF correct substitution 1CA for total surface area (3)	M2
3.2.1	Time in seconds ✓M = $6 \times 60 + 53$ = 413 seconds ✓CA	1M for multiplying by 60 1CA answer in seconds (2)	M1
3.2.2	Total time = $10,8 + 13,6 + 16,1 + 23,1 + 23,2 + 23,9 + 24,3 + 24,8 + 26,7 + 29,3$ ✓M = 215,8 seconds ✓CA $215,8 \div 60$ = 3,596666666667 = 3 minutes + $0,596666666667 \times 60$ = 3 minutes 35,8 seconds ✓✓CA	1M adding all correct values 1CA answer in seconds 1CA minutes 1CA seconds (4)	M2
3.3.1	Area = Length $\times$ Width = $8 \text{ cm} \times 4,2 \text{ cm}$ ✓MA = $33,6 \text{ cm}^2$ Area = Length $\times$ Width = $8 \text{ cm} \times 3 \text{ cm}$ ✓MA = 24 cm^2 Total area = $33,6 + (2 \times 24)$ ✓M = $81,6 \text{ cm}^2$ ✓CA	1MA calculating area of one face 1MA calculating area of the other face 1M adding all areas and multiplying one area by 2 1CA total area (4)	M2

Q	Answer	Explanation	Level
3.3.2	Perimeter = 4,2 cm + 3 cm + 3 cm ✓M = 10,2 cm × 10 ✓C = 102 mm ✓A	1M adding all correct values 1C converting to mm 1A answer in mm (3)	M2
3.4.1	Total flour $= 2 \times 6 \frac{2}{2} \times 250 \text{ ml}$ $= 13,5 \times 250 \text{ ml}$ $= 3\,375 \text{ ml}$ ✓M ✓CA	1M for multiplying by 2 and by 250 1CA for answer in ml (2)	M2
3.4.2	$^{\circ}\text{C} = (^{\circ}\text{F} - 32) \div 1,8$ $= (375 - 32) \div 1,8$ ✓SF $= 190,55555\bar{5}$ $= 190^{\circ}\text{C}$ ✓CA	1SF substituting into the formula 1CA rounded answer in $^{\circ}\text{C}$ Penalty for not rounding correctly (2)	M1
3.4.3	Number of tablespoons $= \frac{22}{22} \times 2$ ✓M $= 6$ ✓CA	M for dividing by 24 and multiplying by 2 1CA number of tablespoons (2)	M2
			[27]

QUESTION 4

Q	Answer	Explanation	Level
4.1.1	North East ✓✓ A	2 A Answer (2)	MP1
4.1.2	1 hour 10 min OR 1h10 ✓✓ RG	2 RG No marks if learner wrote 1:10 or 13:10 (2)	MP1
4.1.3	6:59 + 1 hour 10 min ✓ MA = 08:09 ✓ A	1 MA Addition 1 A Answer (2)	MP1
4.1.4	$\frac{50 \text{ min}}{60 \text{ min}} = \frac{50}{60} = 0,833333\bar{3}$ Time : 50 min = 0,833333ë = 0,83 hours ✓ C $900 \text{ km} / 0,83 = \frac{900 \times 100}{83} = 1072,28 \text{ km} \checkmark \text{ SF}$ $1072,28 \text{ km} = 900 \text{ km} / 0,83 \times 0,83 \text{ km} \checkmark \text{ MA}$ $747 \text{ km} \checkmark \text{ A}$	1 C Conversion to hours 1 SF correct substitution 1 MA correct multiplication 1 A Answer Accept 750 km (4)	MP3
4.1.5	$P_{(\text{Flight of 1 hour})} = \frac{1}{3} \times 100 \checkmark \checkmark \text{ A}$ $= 33,33\% \checkmark \text{ A}$	1A numerator 1A denominator 1A simplification as a percentage No Penalty for Rounding (3)	P2
4.2.1	Six OR 6 ✓✓ A	2A correct number of doors (2)	MP1
4.2.2	7; 8; 10; 11; 12; 20 and 21 ✓✓ A	2A correct number of rows Penalty: One missing value one mark Two or more missing values no marks (2)	MP1
4.2.3	Length of plane on the plan ✓RT = 50m × 1000 ✓C = $\frac{50 \times 1000}{1000}$ ✓M = 250 mm ✓CA	1RT correct value 1C converting m to mm 1M dividing by 200 1CA answer in mm (4)	MP2
			[21]

QUESTION 5

Q	Answer	Explanation	Level
5.1.1	0,25 km OR 250 m ✓✓RT	2 RT reading from table (2)	DH1
5.1.2	49 ✓✓RT	2 RT reading from table (2)	DH1
5.1.3	Questionnaire ✓✓A OR Survey	2A correct data collection instrument (2)	DH1
5.1.4	15,18,19,20,25,25,27,28,28,28,29,30, 30 , 30,33,34,37,38,38,39,39,40,41,43,49 ✓M Median = 30 ✓✓A	1M arranging all correct values 2A correct median (3)	DH2
5.1.5	Mode(s) = 28; 30 ✓✓A	2A Bi-modal (2)	DH1
5.1.6	Mean ✓A $= \frac{222}{22}$ ✓MA = 31,32 ✓CA	1 A for sumtotal or addition of all correct values 1 MA dividing by 25 1CA final answer (3)	DH2
5.1.7	Continuous data ✓✓A	2A continuous (2)	DH1

Ques	Answer	Explanation	Level																											
5.2	<table><tr><th>Distance</th><th>Tally</th><th>Frequency</th></tr><tr><td>0 ñ 0,5</td><td></td><td>7</td></tr><tr><td>0,6 ñ 1</td><td></td><td>5</td></tr><tr><td>1,1 ñ 1,5</td><td></td><td>6</td></tr><tr><td>1,6 ñ 2</td><td></td><td>2</td></tr><tr><td>2,1 ñ 2,5</td><td></td><td>1</td></tr><tr><td>2,6 ñ 3</td><td></td><td>3</td></tr><tr><td>3 ñ 3,5</td><td></td><td>1</td></tr><tr><td colspan="2">TOTAL:</td><td>25</td></tr></table> 1A first 2 correct tally and frequencies 1A second correct tally and frequencies 1A last three correct tally and frequencies 2A Total Penalize 1 mark if Tally and Frequency columns are swopped around	Distance	Tally	Frequency	0 ñ 0,5		7	0,6 ñ 1		5	1,1 ñ 1,5		6	1,6 ñ 2		2	2,1 ñ 2,5		1	2,6 ñ 3		3	3 ñ 3,5		1	TOTAL:		25	✓A ✓A ✓A ✓A (5)	DH1
Distance	Tally	Frequency																												
0 ñ 0,5		7																												
0,6 ñ 1		5																												
1,1 ñ 1,5		6																												
1,6 ñ 2		2																												
2,1 ñ 2,5		1																												
2,6 ñ 3		3																												
3 ñ 3,5		1																												
TOTAL:		25																												
5.3	IQR = Q3 ñ Q1 ✓RT = 38 ñ 26 ✓M = 12 ✓CA	1RT Correct values 1M subtract in correct order 1CA Answer (3)	DH2																											
5.4	✓RT $\frac{?}{??} \times 100$ ✓M = 16% ✓CA	1RT correct values in correct order 1M Multiply by 100 1CA Answer as a percentage (3)	DH2																											
5.5.1	$\frac{11}{??}$ OR 44% OR 0,44 ✓✓A	2A Answer (2)	P2																											
5.5.2	$\frac{?}{??} = 0,36$ ✓✓A	2A Correct decimal (2)	P2																											
			[31]																											
		TOTAL :	150																											