



education

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NORTH WEST PROVINCE

PROVINCIAL ASSESSMENT

GRADE 11

MATHEMATICAL LITERACY P2

NOVEMBER 2019

MARKING GUIDELINES

MARKS: 100

SIMBOL	EXPLANATION
M	Method
MA	Method with accuracy
CA	Consistent accuracy
A	Accuracy
C	Conversion
S	Simplification
RT	Reading from table/graph/map
SF	Correct substitution in formula
O	Opinion/Explanation
P	Penalizing, ea. for no units, incorrect rounding off, etc.
R	Rounding off
NPR	No penalty for rounding.
AO	Answer only
J	Justification
MCA	Method with consistent accuracy

These marking guidelines consist of 7 pages and 2 pages containing cognitive levels

QUESTION 1 [27 marks]			
Ques.	Solution	Explanation	Level
1.1.1	$\% = \frac{250-200}{200} \times 100$ $= \frac{50}{200} \times 100$ $= 25\%$	1 SF Substitution 1 M Difference 1 A Answer (3)	2
1.1.2	Carry goods ✓✓ OR Make art/Fishing lines ✓✓ OR Paint ✓✓ OR Protect ✓✓ OR Packaging ✓✓ Any valid advantage	2 O Opinion (2)	4
1.1.3	1989✓ and 2002✓	1 A 1989 1 A 2002 (2)	2
1.1.4	Glass✓✓ OR Paper ✓✓ Any relevant suggestion	2 O Opinion (2)	4
1.2.1	$\text{Average} = \frac{385\,558}{5} \checkmark$ $\approx 77\,112 \text{ tons } \checkmark \text{ OR } 77\,112 \checkmark$	1 M Concept 1 M Adding all values 1 A Answer (3)	2
1.2.2	$\frac{49+52}{2} \checkmark = 50,5\% \checkmark$	1 M Concept of median 1 A Answer NPR (2)	2
1.3.1	$\text{Surface Area} = 4 \times 10 \times 6 + 2 \times 6 \times 6 \checkmark$ $= 240 + 72$ $= 312 \text{ cm}^2 \checkmark$ $\text{Cardboard needed} = 312 + \frac{5}{100} \checkmark \times 312$ $= 327,6 \text{ cm}^2 \checkmark$ OR $\text{Surface Area} = 4 \times 10 \times 6 + 2 \times 6 \times 6 \checkmark$ $= 240 + 72$ $= 312 \text{ cm}^2 \checkmark$ $\text{Cardboard needed} = \frac{105}{100} \checkmark \times 312$ $= 327,6 \text{ cm}^2 \checkmark$ OR $\text{Surface Area} = 2[6 \times 6 + 6 \times 10 + 6 \times 10] \checkmark$ $= 72 + 240$ $= 312 \text{ cm}^2 \checkmark$ $\text{Cardboard needed} = 312 + \frac{5}{100} \checkmark \times 312$ $= 327,6 \text{ cm}^2 \checkmark$ OR $\text{Surface Area} = 2 \times (6 \times 6) + 24 \times 10 \checkmark$ $= 312 \text{ cm}^2 \checkmark$ $\text{Cardboard needed} = 312 + \frac{5}{100} \checkmark \times 312$ $= 327,6 \text{ cm}^2 \checkmark$	1 SF Substitution 1 A Answer 1 M % calculations 1 A Answer OR 1 SF Substitution 1 A Answer 1 M % calculations 1 A Answer OR 1 SF Substitution 1 A Answer 1 M % calculations 1 A Answer OR 1 SF Substitution 1 A Answer 1 M % calculations 1 A Answer (4)	3
1.3.2	$327,6 \times 1,2c \checkmark$ $= 393,12c \checkmark$ $= R3,93 \checkmark$ The claim is not valid ✓	CA from Q1.3.1 1 M Multiplying by 1,2 1 CA Answer 1 C Convert to Rand 1 Opinion (4)	4

1.3.3	<p>On the length = $\frac{31}{6} = 5,17 \approx 5 \checkmark$</p> <p>On the width = $\frac{24}{6} = 4 \checkmark$</p> <p>On the height = $\frac{25}{10} = 2,5 \approx 2 \checkmark$</p> <p>Number of containers = $5 \times 4 \times 2 = 40 \checkmark$</p> <p>Claim is valid \checkmark</p>	<p>1 A length</p> <p>1 A width</p> <p>1 A height</p> <p>1 A Number of boxes</p> <p>1 O Opinion</p>	4
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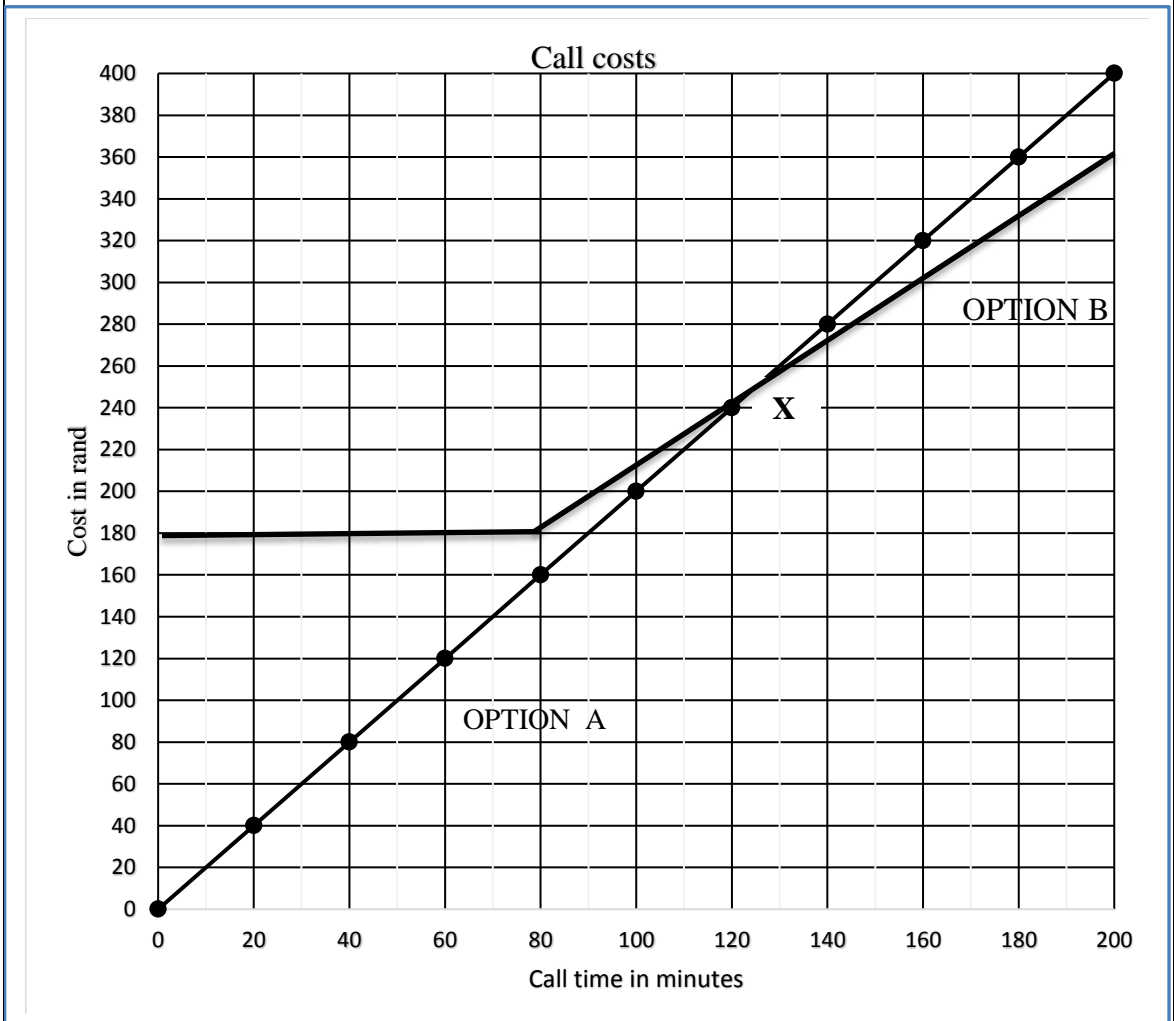
QUESTION 2 [24 marks]			
Ques.	Solution	Explanation	Level
2.1.1	NE $\checkmark \checkmark$	2 A Answer (2)	2
2.1.2	From Port Elizabeth take the N10 to Colesberg. \checkmark Turn right on the N1 \checkmark to Bloemfontein.	2 RT Reading from map (2)	2
2.1.3	<p>1 : 10 000 000</p> <p>1 cm \rightarrow 100 km \checkmark</p> <p>5,5 \checkmark cm \rightarrow $5,5 \times 100 \checkmark = 550$ km \checkmark</p> <p>OR</p> <p>5,5 $\checkmark \times$ 10 000 000 \checkmark</p> <p>= 55 000 000</p> <p>= $\frac{55\,000\,000}{100\,000} \checkmark$</p> <p>= 550 km \checkmark</p> <p>(accept between 5,3 cm and 5,7 cm 530 to 570 km)</p>	<p>1 C Conversion</p> <p>1 M Measurement</p> <p>1 M Multiplying by 100</p> <p>1 A Answer</p> <p>OR</p> <p>1 M Measurement</p> <p>1 M Multiplying by 10 000 000</p> <p>1 C Conversion</p> <p>1 A Answer</p> <p>(4)</p>	3
2.2.1	<p>Time = $\frac{\text{Distance}}{\text{Speed}}$</p> <p>= $\frac{325 \text{ km}}{90 \text{ km/h}} \checkmark$</p> <p>= 3,6 hour \checkmark</p> <p>His claim is not valid \checkmark</p> <p>OR</p> <p>Distance covered in 4 hours</p> <p>90 km/h = $\frac{\text{Distance}}{4 \text{ h}}$</p> <p>Distance = $90 \times 4 \checkmark$</p> <p>= 360 km \checkmark</p> <p>His claim is not valid \checkmark</p> <p>OR</p> <p>Speed = $\frac{325 \text{ km}}{4 \text{ h}} \checkmark$</p> <p>= 81,25 km/h \checkmark</p> <p>His claim is not valid \checkmark</p>	<p>1 Substitution</p> <p>1 A Answer</p> <p>1 O Opinion</p> <p>OR</p> <p>1SF Substitution</p> <p>1 A Answer</p> <p>1 O Opinion</p> <p>OR</p> <p>1SF Substitution</p> <p>1 A Answer</p> <p>1 O Opinion</p> <p>(3)</p>	4
2.2.2	<p>$\frac{6}{100} \times 325$</p> <p>= 19,50 litres \checkmark</p> <p>Cost = $19,50 \times 13,95$</p> <p>= R272,025 \checkmark</p> <p>Return trip = $R272,025 \times 2 \checkmark$</p> <p>= R544,05 \checkmark</p> <p>The farmer's statement is not correct \checkmark</p>	<p>1 A Consumption rate</p> <p>1 CA Cost</p> <p>1 M Multiplying by 2</p> <p>1 CA Return trip cost</p> <p>1 J Justification</p>	4

	<p>OR</p> $\frac{6}{100} \times 325$ $= 19,50 \text{ litres} \checkmark$ <p>Return trip = $19,5 \times 2 \checkmark$</p> $= 39 \text{ litres} \checkmark$ <p>Cost = $39 \times 13,95$</p> $= \text{R}544,05 \checkmark$ <p>The farmer's statement is not correct \checkmark</p>	<p>OR</p> <p>1 A Consumption rate</p> <p>1 M Multiplying by 2</p> <p>1 CA Return trip litres</p> <p>1 CA Cost</p> <p>1 J Justification</p> <p>NPR (5)</p>	
2.2.3	<p>Radius = $\frac{1,75}{2} = 0,875 \checkmark$</p> $V = \pi r^2 h$ $= 3,142 \times (0,875)^2 \times 7 \checkmark$ $= 16,839 \dots m^3 \checkmark$ $= 16\,839 \text{ litres} \checkmark$	<p>1 M Radius</p> <p>1 SF Substitution</p> <p>1 A Answer</p> <p>1 C Conversion (4)</p>	3
2.2.4	$16\,839 - \frac{0,01}{100} \checkmark \times 16\,839$ $= 16\,837,32 \text{ l} \checkmark$ <p>Number of 2 l containers = $\frac{16\,837,32}{2} \checkmark$</p> $= 8\,418 \checkmark$ <p>OR</p> $\frac{99,99}{100} \checkmark \times 16\,839$ $= 16\,837,32 \text{ l} \checkmark$ <p>Number of 2 l containers = $\frac{16\,837,32}{2} \checkmark$</p> $= 8\,418 \checkmark$	<p>1 M % calculation</p> <p>1 A Answer</p> <p>1 M Dividing by 2</p> <p>1 A Answer</p> <p>OR</p> <p>1 M % calculation</p> <p>1 A Answer</p> <p>1 M Dividing by 2</p> <p>1 A Answer (4)</p>	3

QUESTION 3 [28 marks]

Ques.	Solution	Explanation	Level
3.1.1(a)	R0,00 ✓	1 A R0,00	2
3.1.1(b)	R180✓	1 A R180	2
3.1.1(c)	150✓✓	2 A 150	(4) 2

3.1.2



Naming of the graph	1 A	
(0;180)	1 A	
(80;180)	1 A	
(120;240)	1 A	
Break-even-point (X)	1 A	
Joining points	1 A	(6) 3

3.1.3	Where both options costs the same amount for the same talk time✓✓	2 O Opinion	(2)	4
3.1.4	When the talk time is less than 120 minutes✓✓	CA From Q3.1.2 2 O Opinion	(2)	4
3.1.5	2019 – 1973 ✓ = 46 years✓ No✓	1 M Subtraction 1 A Answer 1 J Justification	(3)	4

3.2.1	$2 + 3 = 5 \checkmark$ $R108 = \frac{3}{5} \times \text{Total amount} \checkmark$ $\text{Total amount} = R108 \times \frac{5}{3} \checkmark$ $= R180 \checkmark$ OR Calls:Data = 2:3 \checkmark x:R108 $3x = R216 \checkmark$ Calls = x = R72 \checkmark □ Total amount = R180 \checkmark	1 M Adding 1 SF Substitution 1 M Multiplying by $\frac{5}{3}$ 1 A Answer OR 1 Ratio 1 SF Substitution 1 M Calculating x 1 A Answer (4)	3
3.2.2	Surf the web $\checkmark\checkmark$ OR App download $\checkmark\checkmark$ OR Software update $\checkmark\checkmark$ OR Watch videos $\checkmark\checkmark$ OR Send emails $\checkmark\checkmark$ OR Check facebook $\checkmark\checkmark$ OR Twitter $\checkmark\checkmark$ OR Whatsapp $\checkmark\checkmark$	2 O Opinion (2)	4
3.3.1	$\frac{15}{32} \checkmark\checkmark$ OR 0,47 $\checkmark\checkmark$ OR 46,88% $\checkmark\checkmark$	2 A Answer (2)	2
3.3.2	$49 - 32 = 17$ learners \checkmark $\frac{17}{49} \times 100 \checkmark$ $= 34,69\% \checkmark$	1 A Number of learners 1 M Multiplying fraction by 100 1 A Answer (3)	3

QUESTION 4 [21 marks]			
Ques.	Solution	Explanation	Level
4.1.1	$BMI = \frac{80}{(1,67)^2} \checkmark$ $= 28,69 \text{ kg/m}^2 \checkmark$ Overweight \checkmark	1 SF Substitution 1 A Answer 1 A Answer (3)	2
4.1.2	Do exercises $\checkmark\checkmark$ OR Loose weight $\checkmark\checkmark$ Eat healthy food $\checkmark\checkmark$ OR Consult a dietician $\checkmark\checkmark$ Any logical answer.	2 O Opinion (2)	4
4.2.1	Original price = R610 + R8 230 = R8 840 \checkmark $\frac{610}{8840} \times 100\% \checkmark$ = 6,9% \checkmark Her claim is not valid \checkmark OR Original price = R610 + R8 230 = R8 840 \checkmark $\frac{7}{100} \times 8840 \checkmark = R618,80 \checkmark$	1 A Original price 1 M % Calculation 1 A Answer 1 O Opinion OR 1 A Original price 1 M % Calculation 1 A Answer	4

	Her claim is not valid ✓	1 O Opinion (4)																			
4.2.2	$\frac{1}{0,07} \times 610 = R8\ 714,29$ ✓ Her statement is not correct. ✓	1 M Dividing by 0,07 1 A Answer 1 J Justification (3)	4																		
4.3.1	<p style="text-align: center;">Inflation rate in Namibia from 2010 to 2017</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <caption>Data for Inflation Rate in Namibia (2010-2017)</caption> <thead> <tr> <th>Year</th> <th>Inflation Rate (%)</th> </tr> </thead> <tbody> <tr><td>2010</td><td>6.7</td></tr> <tr><td>2011</td><td>1.6</td></tr> <tr><td>2012</td><td>8.2</td></tr> <tr><td>2013</td><td>6.7</td></tr> <tr><td>2014</td><td>6.7</td></tr> <tr><td>2015</td><td>3.9</td></tr> <tr><td>2016</td><td>5.3</td></tr> <tr><td>2017</td><td>8.2</td></tr> </tbody> </table> <p style="text-align: right;">1 A for 2014 1 A for 2015 1 A for 2016 (3)</p>		Year	Inflation Rate (%)	2010	6.7	2011	1.6	2012	8.2	2013	6.7	2014	6.7	2015	3.9	2016	5.3	2017	8.2	2
Year	Inflation Rate (%)																				
2010	6.7																				
2011	1.6																				
2012	8.2																				
2013	6.7																				
2014	6.7																				
2015	3.9																				
2016	5.3																				
2017	8.2																				
4.3.2	$\frac{47,2}{8} = 5,9\%$ ✓	1 MA dividing by 8 1 A Answer (2)	2																		
4.3.3	6,7% ✓✓	2 A Answer (2)	2																		
4.3.4	The inflation rate decreases from 2014 to 2015 ✓ The inflation rate increases from 2016 to 2017 ✓	1 A Decreases 1 A Increases (2)	4																		

TOTAL: 100

CONTENT COMPOSITION**TAXONOMY LEVELS**

	Finances	Measuring	Maps Physical world	Data	Proba bility	2	3	4	Total
Qu. 1									
1.1.1				3		3			3
1.1.2				2				2	2
1.1.3				2		2			2
1.1.4				2				2	2
1.2.1				3		3			3
1.2.2				2		2			2
1.3.1			4				4		4
1.3.2	4							4	4
1.3.3		5						5	5
									27
Qu. 2									
2.1.1			2			2			2
2.1.2			2			2			2
2.1.3			4				4		4
2.2.1		3						3	3
2.2.2	5							5	5
2.2.3		4					4		4
2.2.4		4					4		4
									24
Qu. 3									
3.1.1	4					4			4
3.1.2	6						6		6
3.1.3	2							2	2
3.1.4	2							2	2
3.1.5		3						3	3
3.2.1	4						4		4
3.2.2	2							2	2
3.3.1					2	2			2
3.3.2					3		3		3
									28
Qu. 4									
4.1.1			3			3			3
4.1.2			2					2	2
4.2.1	4							4	4
4.2.2	3							3	3
4.3.1				3		3			3
4.3.2				2		2			2
4.3.3				2		2			2
4.3.4				2				2	2
									21
TOTAL	36	19	17	23	5	30	29	41	100

SUMMARY

QUESTION	Level 1	Level 2	Level 3	Level 4	Total
1	0	10	4	13	27
2	0	4	12	8	24
3	0	6	13	9	28
4	0	10	0	11	21
TOTAL MARKS%	0	30	29	41	100
REQUIRED%	0	25	35	40	100