Education and Sport Development

Department of Education and Sport Development
Departement van Onderwys en Sport Ontwikkeling
Lefapha la Thuto le Tlhabololo ya Metshameko

NORTH WEST PROVINCE

NATIONAL
SENIOR CERTIFICATE

GRADE 12

MATHEMATICAL LITERACY PAPER 1

JUNE EXAM 2018

MARKING GUIDELINE

MARKS: 100

SYMBOL	EXPLANATION
M	Method
M/A	Method with accuracy
CA	Consistent accuracy
A	Accuracy
C	Conversion
D	Definition
S	Simplification
RT/RG /RD	Reading from a table/Reading from a graph /diagram
F	Choosing the correct formula
SF	Correct substitution in a formula
O	Opinion/Example
P	Penalty, e.g. for no units, incorrect rounding off etc.
R	Rounding off
J	Justification/Reason
NPR	No penalty for rounding OR omitting units
AO	Answer only

This marking guideline consists of 5 pages

QUESTION 1 [23] ANSWER ONLY FULL MARKS			
Ques	**Solution**	**Explanation**	**Level**
1.1.1	Bracket 1 **OR** R0 – R189 880,00 **OR** 18% of taxable income ✓✓	2A answer (2)	1
1.1.2	Annual tax $= \frac{18}{100} \times 185\,000$ ✓ $= R33\,300,00$ ✓	1M multiplication 1A answer (2)	1
1.1.3	Monthly tax $= \frac{33\,300}{12}$ ✓ $= R\,2\,775,00$✓	1M division 1A answer (2)	1
1.2.1	15; 19; 23; 25; 28; 29; 30; 34; 35; 36; 36; 36; 40; 42; 47 ✓✓	2A answer (2)	1
1.2.2	Minimum = 15✓ Maximum = 47✓	1A minimum 1A maximum(2)	1
1.2.3	Mode = 36 ✓✓	2A answer (2)	2
1.3.1	One unit on the map represents 500 units on the ground ✓✓	2A answer (2)	1
1.3.2	5,2 cm = 52 mm ✓ Perimeter = 40 mm + 55,3 mm + 37 mm + 52 mm ✓ = 184,3 mm ✓	1C conversion 1M adding correct values 1A answer (3)	1
1.4.1	Northern Cape ✓✓	2A answer (2)	1
1.4.2	Total Area = 169 580 + 129 480 + 17 010 + 92 100 + 123 910 + 79 490 + 361 830 + 116 320 + 129 370 ✓ = 1 219 090 km² ✓	1M addition 1A answer (2)	1
1.4.3	Total area of Gauteng = 17 010 × 1 000 000 ✓ = 17 010 000 000 m² ✓	1C conversion 1A answer (2)	1
			[23]
QUESTION 2 [20]			
2.1.1	Pension fund $= \frac{6,43}{100} \times 35\,000$✓ $= R\,2\,250,50$✓	1M method 1A answer (2)	**2**
2.1.2	Net pay = R40 000✓ – 12 902,50✓ = R27 097,50✓	1A for R40 000 1M subtraction 1A answer (3)	**1**
2.1.3(a)	Unemployment Insurance Fund ✓✓	2A answer (2)	**1**

2.1.3 (b)	UIF $= \frac{1}{100} \times 40\,000$✓
	
	$= R\,400,00$✓
	
	          OR
	UIF = R12 902,50 – (R2 250,50 + R9 052 + R1 200) ✓
	= R400,00✓
		1M method
		
		1 A answer
		
		    (2)
			2

2.2.1	Inflation is a rise in the cost of living ✓✓
	          OR
	Inflation is the rising price of goods and services over time.✓✓
	          OR
		2A answer	**1**

	Inflation is the general increase in prices and fall in the purchasing value of money. ✓✓	(2)	
2.2.2	**Percentage increase (A)** $= \frac{New\ amount - Old\ amount}{old\ amount} \times \mathbf{100}\%$ $= \frac{285,84 - 254,08}{254,08}$ ✓$\times 100$ ✓ **A** $= 12,5\%$ ✓	1SF substitution 1 for multiplying by 100 1A answer (3)	**2**

2.2.3	**B** $= 254,08 + 191,26 + 387,58 + 850 + 683,75$✓
	   $= $ R2 366,67✓
	
	 OR
	
	 B $= 2\ 698 - 331,33$✓
	   $= $ R2 366,67✓
	
	 OR
	
	 B $= \frac{2\ 698}{114} \times 100$✓
	
	   $= $ R2 366,67✓
		1M addition
		 1A answer
		
		 (2)
			1

2.2.4	C $= $ R683,75 $\times \frac{\mathbf{115}}{\mathbf{100}}$ ✓
	     $= $ R786,31✓
	
	     OF
	 C $= $ R683,75 $+$ R683,75 $\times \frac{\mathbf{15}}{\mathbf{100}}$ ✓
	     $= $ R683,75 $+$ R102,56
	     $= $ R786,31✓
		1M multiplication
		
		 1A answer
		
		 (2)
			2

2.2.5	Additional Amount $= 3\ 064,43 - 2\ 698,00$✓ $= $ R366,43✓	1M subtraction 1A answer (2)	**1**
QUESTION 3 [16]			

3.1.1	Milk for the recipe $= 200$ ml $+ 250$ ml
	                   $= 450$ ml ✓
	
	 Ratio of cooking oil : Ratio of milk
	             $80 : 450$ ✓
	              $8 : 45$ ✓
		1A milk needed
		
		 1A ratio
		 1S Simplification
		 (3)	

3.1.2	Milk needed for 30 people $= (200$ ml $+ 250$ ml$) \times 3$✓
	                       $= 1\ 350$ ml ✓ $\div 1\ 000$ ✓
	                       $= 1,35$ litres ✓
		1 for multiplying by 3
		 1 for 1 350ml
		 1 for division
		 1CA answer (4)
			2

3.1.3	ºF $= (1,8 \times 180) + 32$✓ $= 356$ºF ✓	1SF substitution 1A answer (2)	**2**
3.1.4	Time to take the pudding out $= 11 : 20$ ✓✓	2A answer (2)	**1**
3.2.1	Radius $= 25$ cm $\div 2 = 12,5$ cm ✓ Volume $= 3,142 \times (12,5$ cm$)^2 \times 10$ cm ✓ $= 4\ 909,38$ cm^3 ✓	1 for radius 1SF substitution 1A answer (3) **NPR**	**2**
3.2.2	Volume of Pudding $= \frac{89}{100} \times 4\ 909,38$ ✓	1M method	

			2
	$= 4\,369{,}35$ cm^3 ✔	1 CA answer (2)	

QUESTION 4 [10]			
4.1	It means that 25% of the babies weigh more than this baby and 75% weigh less. ✔✔	2 O explanation (2)	**1**
4.2	14 kg ✔✔	2 RG (2)	**1**
4.3.1	3rd percentile ✔✔	2 RG (2)	**1**
4.3.2	60 cm $= 0{,}6$ m✔ BMI $= \dfrac{8kg}{(0{,}6m)^2}$ ✔ $= 22{,}22$✔ kg/m^2✔	1 C conversion 1SF substitution 1 CA answer 1A unit (4) **NPR**	**2**

QUESTION 5 [31]			
5.1.1	N1, N4, N12 and N14 ✔✔ Any two	2A answer (2)	**1**
5.1.2	SchwetzerReneka, Delareyville, Coligny, Vryburg and Lichtenburg ✔✔ Any two	2A answer (2)	**1**
5.1.3	South ✔✔	2A answer (2)	**1**
5.1.4	2 cm : 80 km 2 : 8 000 000 1 ✔: 4 000 000 ✔	2A ratio (2) **Allow 21 and 22**	**1**
5.1.5	Distance on the map $= 6{,}1$ cm ✔ Actual distance $= \dfrac{6{,}1 \times 4\,000\,000}{1}$ ✔ $= \dfrac{24\,400\,000}{100\,000}$ ✔ $= 244$ km ✔	1 for measurement 1M method 1C conversion 1A answer (4)	**2**
5.1.6	Time $= \dfrac{255\ km}{100\ km/h}$ ✔ $= 2{,}55$ hours ✔ ≈ 2 hours 33 minutes ✔	1SF substitution 1A answer 1C conversion (3)	**2**
5.2.1	One window ✔✔	2A answer (2)	**2**
5.2.2	4,5 cm : 1,8 m 4,5 : 180✔ 1 : 40 ✔✔	1C conversion 2S simplification (3)	
5.2.3	Width on the plan $= 2{,}1$ cm ✔ Actual width $= 2{,}1$ cm $\times 40$ ✔ $= 84$ cm $\div 100$✔ $= 0{,}84$ m ✔	1 for measurement 1M multiplying by 36 1M division 1A answer (4)	**2**
5.2.4	Area $= 1{,}8$ m $\times 0{,}84$ m ✔ $= 1{,}512$ m^2✔	1SF substitution 1 A answer	

			2
	OR Area = 4,5 cm × 2,1 cm✓ = 9,45 cm²✓	(2)	

5.2.5	Area to be painted = 22,6 m² × 2
	                   = 45,2 m²✓
	
	Area to be covered by a 5 litre tin = 5 × 5,5 m²
	                             = 27,5 m²✓
	
	Number of 5 litre tins = $\dfrac{45,2}{27,5}$ ✓
	
	            = 1,64 ✓
	            ≈ 2 ✓
		1 A total area
		
		1A area to be covered
		
		1M division
		
		1A answer
		1A rounding (5)
			3