basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

MATHEMATICAL LITERACY P1

FEBRUARY/MARCH 2017

FINAL MARKING GUIDELINE

MARKS: 150

Symbol	Explanation
M	Method
M/A	Method with accuracy
CA	Consistent accuracy
A	Accuracy
C	Conversion
S	Simplification
RT/RG/RD	Reading from table/graph/diagram
SF	Correct substitution in formula
O	Opinion/Example
P	Penalty, e.g. for no units, incorrect rounding off, etc.
R	Rounding off
AO	Answer only full marks
NPR	No penalty for rounding

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QUESTION 1 [35 marks]			
Ques	**Solution**	**Explanation**	**Topic/L**
1.1.1	✓✓A Amount deposited/paid **OR** Payments into the bank account. ✓✓A	2A Definition (2)	F L1
1.1.2	✓✓O Amount that is owed to the bank. **OR** Overdraft /borrowed from bank ✓✓O **OR** Money used above the available balance. ✓✓O	2O Interpretation (2)	F L1
1.1.3	✓A A = R8 906,94 – 2 765,66 ✓M = R6 141,28 ✓CA **OR** ✓M A = – 2 765,66 + R8 906,94 ✓A = R6 141,28 ✓CA	1M adding 1A correct amounts 1CA value for A **OR** 1M adding 1A correct amounts 1CA value for A **AO** (3)	F L2
1.1.4	Total salary deposits ✓MA = R1 285,17 + R8 906,94 + R23 004,57 = R33 196,68 ✓CA	1MA adding all the amounts 1CA simplification (if one value omitted) **AO** (1 value omitted/added max 1) (2)	F L1
1.1.5	11 February was a Thursday ✓M 26 February was a Friday ✓A Total number of week days = 12 ✓CA	1M identifying day of week 1A day of week 1CA days **AO** (11 days 1 mark if AO but 2 marks if working shown) (3)	M L1

Ques	Solution	Explanation	Topic/L
1.1.6	Cash withdrawal fee ✓MA = R6,70 + R4,00 + 1,20% × R5 490,00 = R6,70 + R4,00 + R65,88 ✓S = R76, 58 ✓CA	1MA adding/multiplication 1S simplification 1CA amount **AO** (Max 2 marks if R6,70 is omitted) (Max 1 mark if both R6,70 and R4,00 omitted) (3)	F L2
1.1.7	External ✓✓A	2A correct statement (2)	F L1
1.2.1	Final amount of money in the account after a year ✓ A ✓ M ✓ RT = R9 500 × 106,4% = R10 108 **OR** Amount of interest earned after a year ✓ RT = R9 500 × 6,4% = R608 Final amount of money in the account after a year ✓ M ✓ A = R9 500 + R608 = R10 108	1RT reading from table 1M for adding percentages 1A multiplying correct values **OR** 1RT reading from table 1M for adding interest 1A multiplying correct values (3)	F L2
1.2.2	Interest for six months ✓ RT = 7,4% ÷ 2 = 3,7 % ✓ A Amount of interests earned after 6 months = R10 108 × 3,7% = R374 ✓ CA Final amount of money in the account after another 6 months = R10 108 + R374 = R10 482,00 ✓ CA **OR**	1RT reading correct value (7,4%)from table 1A for calculating 6 month interest rate 1CA for interest 1CA for amount plus interest **OR**	F L2

Ques	Solution	Explanation	Topic/L
	OR Interest for six months ✓ RT = 7,4% ÷ 2 = 3,7 % ✓ A Final amount of money in the account after 6 more months = 1,037 × R10 108 ✓ M = R10 482,00 ✓ CA	**OR** 1RT reading correct value(7,4%) from table 1A for calculating 6 month interest rate 1M adding and multiplying interest 1CA amount plus interest **AO** (4)	
1.3.1	The increase ✓O in the price ✓O for goods and services from one period to another period **OR** Inflation is the ✓O rise over time in prices ✓O of goods and services.	1O increase 1O price of goods or services (2)	F L1
1.3.2	Number of hours worked = $\frac{514,80}{11,44}$ ✓ A ✓ A **OR** $\frac{476,55}{10,59}$ ✓ A ✓ A = 45 **OR** Monthly wage = 45 × R11,44 ✓ A ✓ A = R514,80 ✓ A = R 476,55 ✓ A	1A numerator 1A denominator 1A hours 1A rate (2)	F L1
1.3.3	Minimum monthly rate (B) = $\frac{r \times w}{12}$ ✓SF ✓A $= \frac{514,80 \times 52}{12}$ **B** = 2 230,80 ✓CA **OR** Minimum monthly rate (B) = 2 065,05 ÷ 10,59 × 11,44 ✓MA ✓MA = 2 230,80 ✓CA	1SF substitution correct value 1A for multiplying by 52 1CA simplification OR 1MA divide by 10,59 1MA multiply by 11,44 1CA simplification **AO** (3) (4 × 514,80 = R2059,20) Max 1 mark	F L2

Ques	Solution	Explanation	Topic/L
1.3.4 (a)	Total minimum wage = 40 hours ✓MA × R11,44 per hour = R457,60 ✓CA	1MA multiplying 1CA simplification **AO** (2)	F L1
1.3.4 (b)	Actual hourly rate for one domestic worker $= \frac{R550,90}{40\ hour}$ ✓M = R13,7725 per hour = R13,77 per hour } ✓CA	1M dividing by weekly hours 1CA hourly rate **AO** **NPR** (2)	F L2
		[35]	

QUESTION 2 [28 marks]			
Ques	**Solution**	**Explanation**	**Topic/L**
2.1.1	End time = 18:15 + 25 min = 18:40 ✓MA ✓A Time set aside = time from 14:00 to 18:40 ✓M = 4 hours 40 min ✓CA or $4\frac{2}{3}$ hr or 4,67 hrs **OR** Time set aside for start of last items = time from14:00 to 18:15 ✓A = 4 hours 15 min ✓MA Time set aside = 4 hours 15 min + 25 min ✓M = 4 hours 40 min ✓CA or $4\frac{2}{3}$ hr or 4,67 hrs	1MA calculating end time 1A using time on table 1M subtracting 1CA total time 1A using time on table 1MA calculating time 1M adding 1CA total time **AO** (4) [omitting time (25 min) max 3 marks]	M L2
2.1.2	Difference in mass = 800 g ✓MA – 600 g = 200 g ✓CA	1MA subtracting correct mass (reversing values-no penalty) 1CA mass (Identifying correct weights only max 1 mark) **AO** (2)	M L1
2.1.3	17 years ✓A 17:05 ✓✓RT/CA	1A correct age 2RT /CA reading from table (3) 18 years 16:05 (Max 2 marks for 16:05)	M L2
2.2.1	Obese ✓✓RT	2RT weight status (2)	M L1
2.2.2	Height in inches = 6 × 12 + 3 = 75 } ✓M BMI = $\frac{200}{75 \times 75} \times 703$ ✓SF ✓C = 24,99556 ✓CA = 25 ✓R	1M multiplying/adding 1C conversion 1SF substitution 1CA simplification 1R rounding **AO** (5)	M L2

Ques	Solution	Explanation	Topic/L
2.3.1	Total length of podium = 50 cm + 50 cm + 50 cm ✓M = 150 cm ÷ 100 = 1,5 m ✓C	1M adding 1C converting to m **AO** (2)	M L2
2.3.2	✓A C = 37,5 ÷ 5 × 4 ✓M = 30 cm **OR** ✓A C = 22,5 ÷ 3 × 4 ✓M = 30 cm ✓A **OR** Number of parts = 5 + 4 + 3 = 12 $\frac{5}{12}$ × total height of podium = 37,5 ✓M Total height of podium = $\frac{450}{5}$ = 90 ✓A **C** = 90 – 37,5 – 22,5 or **C** = $\frac{4}{12}$ × 90 = 30 ✓A	1A correct values 1M using ratio 1A simplification **OR** 1A correct values 1M using ratio 1A simplification 1M using ratio 1A height of podium 1A simplification **AO** (3)	M L2
2.3.3	Volume = length × breadth × height = 50 cm × 50 cm × 37,5 cm ✓ SF ✓ CA = 93 750 cm^3 ✓ A	1SF substitution 1CA volume 1A unit AO (3)	M L2

Ques	Solution	Explanation	Topic/L
2.3.4	500 ml = 500 cm^3 ✓C Height = $\frac{\mathbf{500\,cm^3}}{\mathbf{3,142 \times (3,77)^2}\,cm^2}$ ✓SF = 11,196… cm ✓CA ≈ 11 cm ✓R	1C conversion 1SF substitution (accept 500 ml) 1CA simplification 1R rounding (Incorrect conversion max 3 marks) AO (4)	M L2
		[28]	

QUESTION 3 [23 marks]			
Ques	**Solution**	**Explanation**	**Topic/L**
3.1.1	Bethulie ✓✓A	2A correct town (2)	MP L1
3.1.2	(a) left/east ✓ A (b) Douglas ✓ A (c) right hand side ✓ A	1A correct direction 1A correct street 1A correct side (3)	MP L1
3.1.3	N1 ✓✓A	2A National road (2)	MP L1
3.1.4	✓A ✓A ✓A R701 , R390 , R58 **OR** only R58 ✓✓✓A	3A provincial roads (3)	MP L1
3.1.5	✓A ✓A ✓A Zastron, Rouxville, Smithfield, Bethulie and Venterstad	1A first town 1A second town 1A last three towns (3)	MP L2
3.1.6	Map : Actual ✓A ✓M 42 mm : 72,9 km 42 mm : 72 900 000 ✓C 10 : 17 357 142,86 ✓C A	1A measurement [accept 40 to 43 mm] 1M scale concept 1C conversion 1CA simplified scale [Accept 18 225 000 to 16 953 488,37] **NPR** (Ratio reversed max 3 marks) (4)	MP L3
3.2.1	11 ✓✓RT	2RT reading from diagram (15 one mark) (2)	MP L1
3.2.2	Clockwise ✓✓A	2A direction (2)	MP L1
3.2.3	Voting booths ✓✓A	2A correct point (2)	M L1
		[23]	

QUESTION 4 [39 marks]			
Ques	**Solution**	**Explanation**	**Topic/L**
4.1.1	E ✓✓A	2A correct description (2)	D L1
4.1.2	B ✓✓A	2A correct description (2)	D L1
4.2.1	$\frac{3}{10}$ ✓A $\times$ 100% ✓A = 30% ✓CA	1A numerator 1A denominator 1CA percentage **AO** (3)	P L2
4.2.2	✓MA 72; 109; 118; 137; 137; 144; 144; 146;162; 168 Median = $\frac{137+144}{2}$ ✓M = 140,5 ✓CA	1MA arranging (ascending or descending) 1M median concept 1CA median **AO** (Wrong column used Max 2 marks) (3)	L2 D
4.2.3	✓A 39 % and 41% ✓A	1A mode 1 1A mode 2 (Wrong column used Max 1 mark for both modes) (2)	L1 D
4.2.4	G ✓✓RT	2RT correct learner (Accept 7th learner) (2)	D L1
4.2.5	✓MA 382% ÷ 10 ✓M = 38,2% OR 38% ✓CA **OR** ✓MA $\frac{1337}{10\times350}\times100\%$ ✓M = 38,2% OR 38% OR accept 0,382 OR 0,38 ✓CA	1M mean concept 1MA adding correct values 1CA mean % mark **OR** 1M mean concept 1MA adding correct values 1CA mean % mark **AO** (3)	D L2

Ques	Solution	Explanation	Topic/L
4.2.6	New SBA % $= \frac{137}{300} \times 100\%$ ✓A ✓A $\approx 46\%$ ✓CA **OR** $\frac{137}{6} = 23$ ✓A $= \frac{23}{50} \times \frac{100}{1}$ ✓A $\approx 46\%$ ✓CA	1A numerator 1A denominator 1CA percentage **OR** 1A numerator 1A denominator 1CA percentage **AO** **NPR** (3)	D L2
4.3.1	B ✓✓A	2A correct statement (2)	D L1
4.3.2	Indian/Asian ✓RT 15 – 19 ✓RT	1RT race group 1RT age group (2)	D L1
4.3.3	✓MA Y = 2 334 819 + 2498 098 = 4 832 917 ✓CA **OR** Y = 426 156 + 430 667 + 431 779 + 437 412 + 1 558 886 + 1 150 775 + 365 544 + 31 698 ✓MA Y = 4 832 917✓CA	1MA adding 1CA total **OR** 1MA adding 1CA total **AO** (2)	P L1
4.3.4	$\frac{2334819}{54957764}$ ✓RT $\times 100\%$ ✓M = 4,25% ✓CA	1RT correct values 1M Probability as a % 1CA percentage **AO** **NPR** (3)	D L2

Ques	Solution	Explanation	Topic/L
4.3.5	✓RT 674 730 : 688 118 ✓A = 337 365 : 344 059 ✓CA	1RT correct values 1A ratio concept 1CA simplified ratio in correct order (Correct unit ratio max 2) (3)	D L1
4.3.6	✓RT $\frac{2\ 498\ 098}{54\ 957\ 764} \times 100\%$ ✓M = 4,545486967..% ✓CA	1RT correct values 1M multiply by 100% 1CA Percentage **AO** **NPR** (3)	D L2
4.3.7	20–39 ✓✓RT	2RT correct age group (2)	D L1
4.3.8	Bar graph **OR** B ✓✓RT	2RT correct graph type (2)	D L1
		[39]	

QUESTION 5 [25 marks]			
Ques	**Solution**	**Explanation**	**Topic/L**
5.1.1	Checkers ✓✓A	2A correct supermarket (2)	F L1
5.1.2	✓MA X = R440,85 – R(19,99 + 7,99 + 14,99 + 89,99 + 46,99 + 15,99 + 9,99 + 31,99 + 19,99 + 25,99 + 76,99 + 19,99 + 23,99 + 17,99) X = R440,85 – R422,86 = R17,99 ✓CA	1MA adding/subtracting 1CA simplification **AO** (2)	F L1
5.1.3	Difference = R15,99 – R13,50 ✓MA = R2,49 ✓CA	1MA subtracting correct values 1CA simplification (accept –R2,49) AO (2)	F L1
5.1.4	9 ✓✓A	**[CA from Q 5.1.2]** 2A correct number (2)	F L1
5.1.5	Cabbage ✓✓A Milk ✓A	2A first product 1A second product (3)	F L1
5.1.6	Eggs ✓✓A	2A product (2)	F L1
5.1.7	Difference in cost ✓A ✓M ✓A ✓M = R(49,99 – 36) × 2,5 **OR** R(49,99 × 2,5 – 36 × 2,5) = R 34,98 ✓CA **OR** Woolworths = R49,99 × 2,5 ✓M = R124,98 ✓A P n P = R36,00 × 2,5 = R90,00 ✓A Difference in cost = R124,98 – R90,00 ✓M = R34,98 ✓CA	2A correct prices 1M for subtracting prices 1M multiplying 1CA simplification **OR** 1M multiplying with correct price 1A simplification 1A simplification 1M for subtracting prices 1CA simplification (5)	F L2

Ques	Solution	Explanation	Topic/L
5.2.1	Checkers ✓✓A	2A correct supermarket (2)	F L1
5.2.2	Woolworths ✓✓A **OR** PnP ✓✓A	2A correct supermarket (2)	F L1
5.2.3	Difference = R 479,44 ✓A – R208,74 ✓M = R 270,70 ✓CA **OR** Difference = R 440,85 ✓A – R208,74 ✓M = R 232,11 ✓CA	1A correct values 1M subtraction 1CA simplification 1A correct values 1M subtraction 1CA simplification AO (3)	F L1
		[25]	
		TOTAL	**150**

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