GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

GAUTENG DEPARTMENT OF EDUCATION

PREPARATORY EXAMINATION

2020

MARKING GUIDELINES

MATHEMATICAL LITERACY P1 (10601)

Codes	Explanation
M	Method
MA	Method with Accuracy
MCA	Method with Continuous 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

15 pages

QUESTION 1

Q	ANSWER	EXPLANATION	LEVEL
1.1			
1.1.1	Value Added Tax ✓✓A	2 A correct wording (2)	F1
1.1.2	R75,90 × $\frac{15}{100}$ ✓MA = R11,385 = R11,39 ✓ A	1 MA multiply by 15% or 0,15 1 A answer **No penalty for rounding** (2)	F1
1.1.3	R13,99 × $\frac{9,5}{100}$ ✓MA = R1,32905 = R13,99 + R1,32905 = R15,31905 = R15,32 ✓ A **OR** R13,99 × $\frac{109,5}{100}$ ✓MA = R15,31905 = R15,32 ✓ A	1 MA Multiply by 9,5%, 0,095, 109,5% or 1,095 1 A answer **No penalty for rounding** (2)	F1
1.1.4	R13 500 × $\frac{1}{100}$ ✓MA = R135,00 ✓A	1 MA multiply by 1% or 0,01 1 A correct answer (2)	F1
1.1.5	Gross Income is the income you receive before any deductions, for example pension fund, tax or UIF. ✓✓J **OR** The sum of all wages, salaries or earnings before any deductions or taxes.	2 J explanation **Accept any other RELEVANT explanation** (2)	F1

Q	ANSWER	EXPLANATION	LEVEL
1.1.6	$\frac{8,5\%}{365}$ ✓MA = 0,023287671% = 0,0233% ✓A	1 MA divide by 365 1 A correct answer **Penalty for incorrect rounding** (2)	F1
1.1.7	R2 000 × $\frac{0,0233}{100}$ ✓ MCA = R0,466 ✓ CA	**CA from Q.1.1.6** 1 MCA multiply by 0,0233% or 0,000233 1CA answer (2)	F1
1.2			
1.2.1	800 inches x 2,5 cm ✓MA = 2 000 cm ✓A	1 MA multiply by 2,5 1 A answer (2)	M1
1.2.2	Perimeter = (2 x length) + (2 x width) = (2 x 30 m) + (2 x 20 m) ✓ SF = 60 m + 40 m = 100 m ✓ CA	1 SF substitute in formula 1 CA answer (2)	M1
1.2.3	$\frac{30\ m}{1,5\ m}$ ✓ MA = 20 concrete slabs ✓A	1 MA divide by 1,5 1 A answer (2)	M1
1.2.4	$℃ = \frac{5}{9}(°F - 32)$ $℃ = \frac{5}{9}(90° - 32)$ ✓ SF $= 32,2222222 \ldots\ldots$ = 32˚ ✓ R	1 SF substitute in formula 1 R correct rounded answer (2)	M1
1.3			
1.3.1	17 ✓✓ A	2 A answer (2)	DH1
1.3.2	$\frac{2}{15}$ **or** 0,134 **or** 13,34% ✓✓ A	2 A answer (2)	P1
1.3.3	Range = Max – Min = 45 – 9 ✓ MA = 36 ✓ A	1 MA correct values 1 A answer (2)	DH1
1.3.4	$\frac{9}{50} \times 100$ ✓ MA = 18 % ✓ A	1 MA correct values 1 A answer **Answer only, full marks** (2)	DH1
			[30]

QUESTION 2

Q	ANSWER	EXPLANATION	LEVEL
2.1			
2.1.1	R7,99 x 3,8 kg ✓ MA = R30,36 ✓ A	1 MA multiplication 1 A answer (2)	F1
2.1.2	Cost price = $\frac{R720}{120}$ ✓ MA Cost price = R6,00 ✓ A	1 MA division 1 A answer (2)	F1
2.1.3	Income = R720,00 x 1,2 ✓ MA = R864,00 = R864,00 x 2 ✓ M = R1 728,00 ✓ CA **OR** Income = R720,00 x $\frac{20}{100}$ ✓ MA = R144,00 = R720,00 + R144,00 = R864,00 = R864,00 x 2 ✓ M = R1 728,00 ✓ CA **OR** Income = R720,00 x $\frac{120}{100}$ ✓ MA = R864,00 = R864,00 x 2 ✓ M = R1 728,00 ✓ CA	1 MA multiply by 1,2 1 M multiply by 2 1 CA answer 1 MA multiply by $\frac{20}{100}$ 1 M multiply by 2 1 CA answer 1 MA multiply by $\frac{120}{100}$ 1 M multiply by 2 1 CA answer (3)	F1
2.1.4	% Increase = $\frac{\text{Difference between amounts}}{\text{Original amount}} \times 100$ ✓ SF = $\frac{R23,25 - R15,50}{R15,50} \times 100$ = $\frac{R7,75}{R15,50} \times 100$ = 50% ✓ A	1 SF substitute in formula 1 A answer (2)	F2

Q	ANSWER	EXPLANATION	LEVEL
2.2			
2.2.1	Years = $\frac{60 \text{ months}}{12 \text{ months}}$ ✓ MA = 5 years ✓ A	1 MA divide by 12 1 A answer **Answer only, full marks** (2)	F1
2.2.2	Deposit = R174 900 × $\frac{10}{100}$ ✓ MA = R17 490 ✓ A	1 MA multiply by 10% or 0,1 1 A answer **Answer only, full marks** (2)	F1
2.2.3	Loan amount = R174 900 – R17 490 ✓ M = R157 410 ✓ CA	**CA from Q 2.2.2** 1 M subtract deposit 1 CA answer (2)	F1
2.2.4	Interest p.a. = R157 410 × $\frac{14}{100}$ ✓ MCA = R22 037,40 p.a. Interest for 5 years = R22 037,40 x 5 ✓ M = R110 187 ✓ CA **OR** Interest p.a. = R157 410 × $\frac{14}{100}$ ✓ MCA = R22 037,40 p.a. = R22 037,40 + R22 037,40 + R22 037,40 + R22 037,40 + R22 037,40 ✓ M = R110 187,00 ✓ CA **OR** A= $\frac{P \times r \times n}{100}$ ✓ MCA A= $\frac{R157\,410 \times 14 \times 5}{100}$ ✓ M A = R110 187,00 ✓ CA	**CA from Q 2.2.3** 1 MCA multiply by 14% or 0,14 1 M multiply with 5 1 CA answer (3)	F1
2.2.5	Monthly instalment: = $\frac{R267\,597}{60}$ ✓ M = R4 459,95 ✓ CA	1 M divide by 60 1 CA answer (2)	F1

Q	ANSWER	EXPLANATION	LEVEL
2.3			
2.3.1	Total expenses 2017/18: R251,1 bn + R205,4 bn + R259,4 bn + R196,3 bn + R200,1 bn + R200,8 bn + R194,2 bn + R64,0 bn ✓ MA = R1 571,3 bn ✓ A Total expenses 2018/19: R351,1 bn + R259,4 bn + R205,4 bn + R200,8 bn + R200,1 bn + R196,3 bn + R194,2 bn + R64,0 bn ✓ MA = R1 671,3 bn ✓ A Difference = R1 671,3 bn – R1 571,3 bn ✓ M = R100 bn ✓ CA	1 MA addition 1 A answer 1 MA addition 1 A answer 1 M subtraction 1 CA answer (6)	F2
2.3.2	Social Development ✓ A R259,4 bn – R205,4 bn ✓ MA = R54 bn ✓ A	1 A answer 1 MA subtraction 1 A answer (3)	F2
2.3.3	% Decrease = $\frac{\text{New Amount-Old Amount}}{\text{Old Amount}} \times 100$ ✓ F ✓ SF = $\frac{\text{R205,4 bn-R259,4 bn}}{\text{R259,4 bn}} \times 100$ ✓ SF = $\frac{\text{-R54 bn}}{\text{R259,4 bn}} \times 100$ = - 20,82% ✓ CA	1 F formula 1 SF numerator 1 SF denominator 1 CA answer **NP – Do not penalise if learners swopped numerators and got a positive answer** (4)	F2
			[33]

QUESTION 3

Q	ANSWER	EXPLANATION	LEVEL
3.1			
3.1.1	Perimeter is the total distance around a two dimensional (2D) shape. ✓✓ J **OR** Perimeter is the total length of all the sides of a two dimensional (2D) shape.	2 J explanation **Accept any other RELEVANT explanation** (2)	M1
3.1.2	Total to fit = $\frac{\text{Height of rectangular prism}}{\text{Height of one ice cream sandwich}}$ Total = $\frac{17\text{ cm}}{3\text{ cm}}$ ✓ M Total = 5,66666 ... Total = 5 ✓ R	1 M divide by 3 cm 1 R correct rounding (2)	M2
3.1.3	Volume = $\pi \times (radius)^2 \times height$ ✓ F Volume = $3{,}142 \times (3{,}5\ cm)^2 \times 3\ cm$ ✓ SF Volume = 115,4685 Volume = 115,47 ✓ CA cm^3 ✓ U	1 F correct formula 1 SF substitute in formula 1 CA answer 1 U unit NPR (4)	M2

Q	ANSWER	EXPLANATION	LEVEL
3.1.4	BMI= $\frac{\text{Mass in kg}}{(\text{Height in m})^2}$ 29,38 kg/m^2 = $\frac{\text{Mass in kg}}{(1{,}65\text{ m})^2}$ ✓ SF Mass in kg = 29,38 kg/m^2 x (1,65 m)^2 ✓ M Mass in kg = 79,98705 kg Mass in kg = 80 kg ✓ R **OR** BMI= $\frac{\text{Mass in kg}}{(\text{Height in m})^2}$ Mass in kg = BMI x (Height in m)^2 ✓ M Mass in kg = 29,38 kg/m^2 x (1,65 m)^2 ✓ SF Mass in kg = 79,98705 kg Mass in kg = 80 kg ✓ R	1 SF correct substitution in formula 1 M manipulating formula, making Mass the subject of the equation 1 R correct rounding 1 SF correct substitution in formula 1 M manipulating formula, making Mass the subject of the equation 1 R correct rounding (3)	M2
3.1.5 (a)	Average speed = $\frac{\text{Distance}}{\text{Time}}$ = $\frac{450\text{ m}}{6\text{ min}}$ ✓ SF = 75 m / min ✓ A	1 SF substitute in formula 1 A answer (2)	MP1
3.1.5 (b)	Time: = 16:40 + 00:06 + 00:12 ✓ MA = 16:58 ✓ A	1 MA addition 1 A answer **Answer only, full marks** (2)	MP2

Q	ANSWER	EXPLANATION	LEVEL
3.1.6	Amount of water wasted: = 12 ml x 60 min x 24 hrs ✓ MA = 17 280 ml per day ✓ A Conversion = $\frac{17\ 280\ ml}{1\ 000}$ ✓ C = 17,28 litres ✓ CA **OR** Amount of water wasted: = 12 ml x 1 440 min ✓ MA = 17 280 ml per day ✓ A Conversion = $\frac{17\ 280\ ml}{1\ 000}$ ✓ C = 17,28 litres ✓ CA **OR** Amount of water wasted: = 0,012 x 1440✓✓M ✓MA = 17,28 litres CA	1 MA multiplication 1 A total millilitres wasted per day 1 C conversion 1 CA answer 1 MA multiplication 1 A total millilitres wasted per day 1 C conversion 1 CA answer 2 M for calculating 0,012 1 MA multiplication 1 CA answer (4)	MP2
3.2			
3.2.1	Intervals: = 06:00 – 05:30 = 30 min ✓✓ RT	2 RT correct answer **Any column/times used in table to calculate 30 min = full marks** **Answer only, full marks** (2)	MP1

Q	ANSWER	EXPLANATION	LEVEL
3.2.2	8 stations ✓✓ A **OR** Eight stations	2 A answer **Accept 7 stations or seven stations since Park station was not yet opened.** (2)	MP1
3.2.3	Digital format ✓✓ A	2 A answer (2)	MP2
3.2.4	Travel time: = 06:11 – 05:38 ✓ MA = 33 min ✓ A **OR** = 0:22 + 0:11 ✓ MA = 33 min ✓ A **OR** = 22 min + 11 min ✓ MA = 33 min ✓ A	1 MA subtract time 1 A answer **Any times used in table to calculate 33 min = full marks** **Answer only, full marks** **Unit NB** (2)	MP1
			[27]

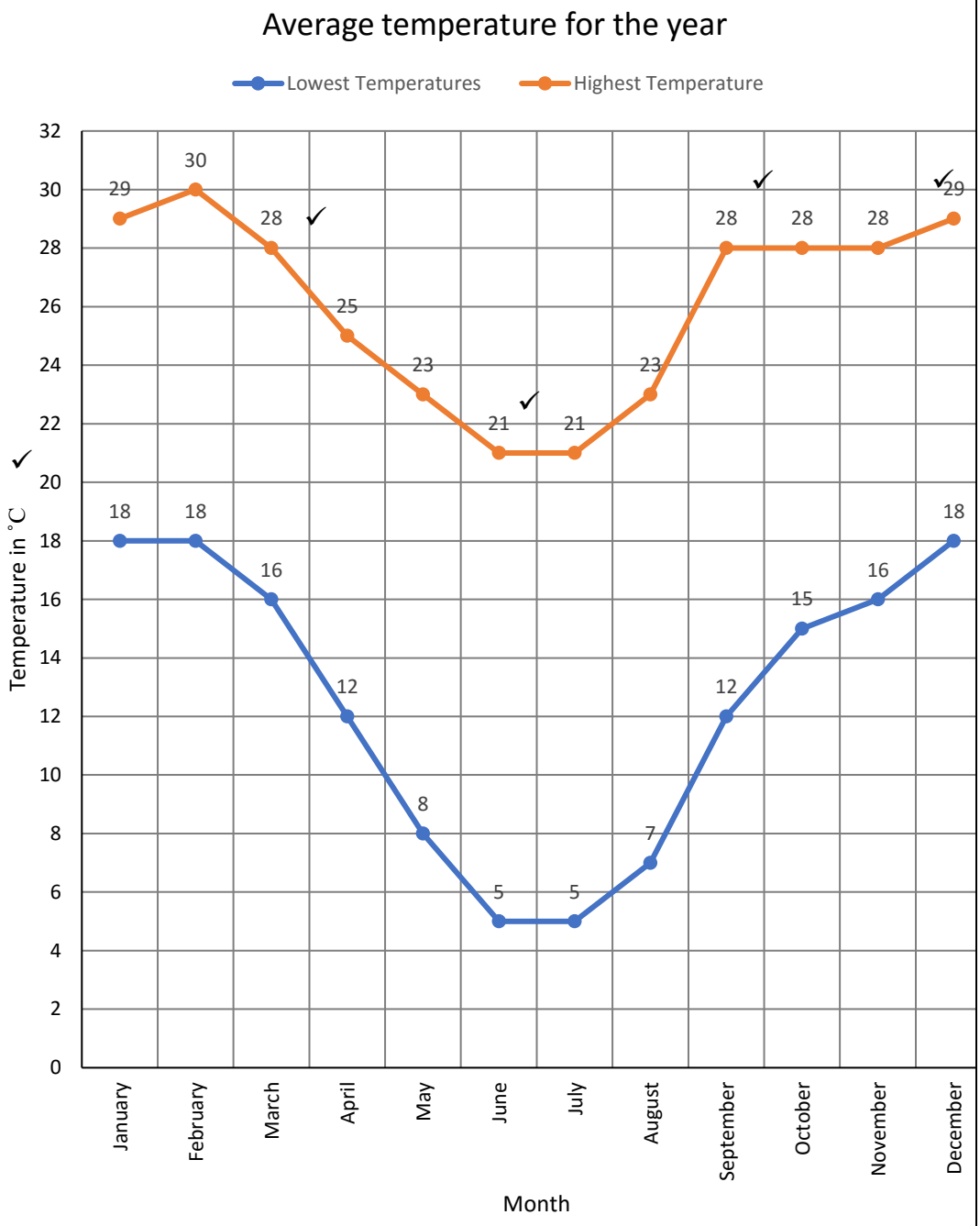
QUESTION 4

Q	ANSWER	EXPLANATION	LEVEL
4.1			
4.1.1	9 bedrooms x 2 people ✓ MA = 18 people ✓ A	1 MA correct values 1 A answer **Answer only, full marks** (2)	MP1
4.1.2	7 tables x 4 chairs ✓ MA = 28 people ✓ A	1 MA correct values 1 A answer **Answer only, full marks** (2)	MP2
4.1.3	28 – 18 ✓ MCA = 10 people ✓ CA	1 MCA correct values 1 CA answer (2)	MP1
4.1.4	A floor plan is a view from a building as seen from above. ✓✓ A **OR** A bird's eye view of a building **OR** A drawing of the arrangement of rooms in a building	2A correct explanation (2)	MP1
4.1.5	South elevation ✓✓ A	2 A correct answer (2)	MP2
4.1.6	32 m ✓✓ A	2 A correct answer (2)	MP1
4.2			
4.2.1	North ✓✓ A	2A correct answer (2)	MP1
4.2.2	17,5 cm ✓✓ A	2A measurement **Range: Accept 17,3 cm – 17,7 cm** **Measure on final copy** (2)	MP1

Q	ANSWER	EXPLANATION	LEVEL
4.2.3	17,5 cm : 3,9 km ✓ A 17,5 cm : 390 000 cm ✓ C $\frac{17,5}{17,5} : \frac{390\,000}{17,5}$ ✓ M 1 : 22 285,71429 1 : 20 000 ✓ R **OR** ✓A $\frac{3,9\ km}{17,5\ cm} \times 100\,000$ ✓C ✓A 1 : 22 285,71429 1 : 20 000 ✓ R **OR** 17,5 cm : 3,9 km ✓ A $\frac{17,5\ cm}{17,5} : \frac{3,9\ km}{17,5}$ ✓ M 1 cm : 0,223 km ✓ CA 1 cm : 0,20 km ✓ R	**CA from Q.4.2.2** 1 A correct ratio 1 C conversion 1 M divide by measurement 1 R correct rounding **CA from Q.4.2.2** 1 A correct numerator 1 A correct denominator 1 C conversion 1 R correct rounding **CA from Q.4.2.2** 1 A correct ratio 1 M divide by measurement 1 CA answer 1 R correct rounding **If last method is used, penalise learners 1 mark for not writing units in final answer** (4)	M3
4.2.4	One unit on the map represents 20 000 units in reality / on the ground. ✓✓ A	2 A correct wording (2)	MP1
4.2.5	R560 ✓✓ A	2 A correct road (2)	MP1
			[24]

QUESTION 5

Q	ANSWER	EXPLANATION	LEVEL
5.1			
5.1.1	Discrete data only consists of whole numbers and continuous data consists of decimal numbers as well. ✓✓ O	2 O correct explanation of both discrete and continuous data. (2)	DH1
5.1.2	February ✓✓ A	2 A correct month (2)	DH1
5.1.3	5 months ✓✓ A	2 A correct number of months (2)	DH1
5.1.4	Range = Max – Min = 8 – 0 ✓ MA = 8 ✓ A	1 MA correct values in correct order 1 A answer **Penalise 1 mark if values are in incorrect order.** (2)	DH1
5.1.5	5, 5, 7, 8, 12, 12, 15, 16, 16, 18, 18, 18 ✓✓ A	2 A correct arrangement **Penalise 1 mark for one missing value, no marks for more than one missing value.** (2)	DH1
5.1.6	Median = $\frac{12+15}{2}$ ✓ MCA = 13,5℃ ✓ CA	**CA from Q. 5.1.5** 1 MCA correct values ÷ 2 1 CA answer (2)	DH2
5.1.7	Mean = $\frac{8+6+6+3+1+0+0+0+1+8+8+8}{12}$ ✓ MA ✓ MA = $\frac{49}{12}$ = 4,0833333.... = 4 days ✓ A	1 MA addition or sum 1 MA divide by 12 1 A answer **No penalty for rounding** (3)	DH2
5.1.8	Q1 = 8,5℃ ✓ RT Q3 = 16,2℃ ✓ RT IQR = Q3 – Q1 = 16,2℃ – 8,5℃ ✓ M = 7,7℃ ✓ CA	2 RT correct values from graph 1 M subtracting in correct order 1 CA answer (4)	DH2

Q	ANSWER	EXPLANATION	LEVEL
5.1.9	 1A Jan, Feb, Mar 1A Apr, May, June 1A July, Aug, Sept 1A Oct, Nov, Dec 1A Labelling (5)		DH3
5.2			
5.2.1	99/00 ✓✓ RT	2 RT correct year (2)	DH1
5.2.2	31 320 ✓✓ A	2 A answer (2)	DH1

Q	ANSWER	EXPLANATION	LEVEL
5.2.3	Mean = $\frac{3+4+3+3+0+5,8}{6}$ ✓ MA = $\frac{18,8}{6}$ ✓ MA = 3,13 % ✓ CA	1 MA addition or total 1 MA correct denominator 1 A answer (3)	DH2
5.2.4	15 years ✓✓ A	2 A answer (2)	DH1
5.2.5	✓ RT ✓ RT Difference = -11 – 5,8 = -16,8 ✓ CA **OR** Difference = 5,8 – (-11) = 16,8	2 RT correct values 1 CA answer (3)	DH1
			[36]

TOTAL: 150