GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

PREPARATORY EXAMINATION

2024

MARKING GUIDELINES

MATHEMATICAL LITERACY (PAPER 1) (10601)

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/graph/diagram/map/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 SYMBOLS:

F = Finance; DH = Data Handling; P = Probability

QUESTION 1 (AO – Answer only: full marks)

Q		ANSWER	EXPLANATION	MARKS	LEVEL
1.1	1.1.1	Gross income is the income Sally receives from the Johannesburg Zoo before any deductions are made. ✓✓A (Accept any sensible/logical answer)	1A income received 1A before deductions were made	(2)	F1
	1.1.2	Twenty-six thousand one hundred rand ✓✓A	2A for value in words	(2)	F1
	1.1.3	July ✓✓RT Accept: 7th month	2 RT correct month	(2)	F1
	1.1.4	A = R1 200 + R2 186,78 + R1 390 ✓ MA = R4 776,78 ✓A B = R26 100 − R4 776,78 ✓MCA = R21 323,22 ✓CA	1MA adding all the correct values. 1A correct answer 1 MCA subtract A 1CA answer	(4)	F1
	1.1.5	✓A ✓A 32 years and 1 month	1A for 32 years 1A for 1 month	(2)	F1
	1.1.6	Pay as you earn ✓✓A	2 A correct answer	(2)	F1
1.2	1.2.1	Swedish Krona ✓✓A	2A answer	(2)	F1
	1.2.2	R1,82: 1 Krona R28 573: ? Krona $= \frac{\text{R28 573}}{\text{R1,82}}$ ✓MA = Krona 15 699,45 ✓A	1MA division 1A correct answer	(2)	F1

Q		ANSWER	EXPLANATION	MARKS	LEVEL
1.3	1.3.1	G ✓✓A	2A correct answer	(2)	DH1
	1.3.2	B ✓✓A	2A correct answer	(2)	DH1
	1.3.3	D ✓✓A	2A correct answer	(2)	DH1
	1.3.4	F ✓✓A	2A correct answer	(2)	DH1
1.4	1.4.1	Bar graph ✓✓A	2A correct answer	(2)	DH1
	1.4.2	Level 7 ✓✓A	2A correct answer	(2)	DH1
				[30]	

QUESTION 2

Q		ANSWER	EXPLANATION	MARKS	LEVEL
2.1	2.1.1	Cost excluding VAT $= \frac{R432}{1,15}$ ✓MA $= R375,65$ ✓A **OR** Cost excluding VAT $= R432 \times \frac{100}{115}$ ✓MA $= R375,65$ ✓A	1MA dividing 1A answer 1MA multiply and divide 1A answer	(2)	F2
	2.1.2 (a)	Total cost = Venue hire + (Number of Adults × R432) + (Number of Pensioners × 60% × R432) + (Number of children × 25% × R432) + (Number of children above 5 × R432) **OR** Total cost = Venue hire + (Number of Adults × R432) + (Number of pensioners × R259,20) + (Number of children × R108) <u>Cost on a Thursday:</u> Venue hire = R0 Pensioners = R515 × 2 × 60% ✓MA = R618 ✓A Children under 5 years (adults) = 4 × R515 × 25% = R515 ✓A Guests above 5 years = [(42 × 2) + 6] × R515 = R46 350 ✓CA Total cost = R618 + R515 + R46 350 = R47 483 ✓CA	1MA correct multiplication by 2 and 60% 1A answer pensioners 1A answer 1CA cost for guests above 5 years 1CA total cost Thursday		F3

		<u>Cost on a Saturday:</u> Venue Hire = R15 650 Pensioners = R432 × 2 × 60% = R518,40 ✓CA Children under 5 years = 4 × R432 × 25% = R432 Guests above 5 years (adults) = [(42 × 2) + 6] × R432 = R38 880 ✓CA Total cost = R15 650 + R518,40 + R432 + R38 880 ✓MCA = R55 480,40 ✓CA <u>Total savings:</u> Savings = R55 480,40 − R47 483 = R7 997,40 ✓CA	1CA cost pensioners 1 CA guests above 5 years 1 MCA adding all values. 1CA total cost 1CA answer	(10)	
	2.1.2 (b)	✓MCA ✓RT Total refund = R47 483 × 90% = R42 734,70✓CA	**CA 2.1.2(a)** 1MCA total cost 1RT multiplying with 90% 1CA answer	(3)	F2
	2.1.2 (c)	% savings = <u>R7 997,40</u> × 100 ✓SF R55 480,40 = 14,41% ✓CA = 10% ✓R	**CA 2.1.2(a)** 1SF substitution in formula 1CA answer 1R rounding down	(3)	F2
	2.1.3	The venues are not as busy during the week because to people are working. The demand is low thus the venue tries to get more people to book by decreasing the cost of renting the venue ✓✓O *(Accept any logical/sensible explanation)*	2O correct explanation	(2)	F4
2.2	2.2.1	✓MA 60 × R29,93 = R1 795,80 ✓A 90 × R52,44 = R4 719,60 150 × R89 = R13 350 ✓CA 150 × R114,44 = R17 166 521 × R179,47 = R93 503,87 ✓CA Total cost = R130 535,27 ✓CA His statement is INVALID ✓O	1MA correct kilolitres and correct rate 1A answer 1st category 1CA 3rd category answer 1CA last category answer 1CA total cost 1O conclusion	(6)	F2

Q		ANSWER	EXPLANATION	MARKS	LEVEL
	2.2.2	To reduce water consumption, the more water you use, the more you will pay. ✓✓O *(Accept any logical/sensible answer)*	2O opinion	(2)	F4
	2.2.3	$P(Rate\ less\ than\ R30) = \frac{2}{5}$ ✓A✓A = 0,4 ✓CA	1A numerator 1A denominator 1CA probability as a decimal **AO**	(3)	P1
				[31]	

QUESTION 3					
Q		**ANSWER**	**EXPLANATION**	**MARKS**	**LEVEL**
3.1	3.1.1	Gauteng ✓✓RT	2RT correct answer	(2)	DH1
	3.1.2	6 497 100 + 2 899 900 + 14 273 800 + 11 067 500 + 5 774 600 + 4 442 500 + 1 213 500 + 3 854 400 + 6 508 700 ✓RT✓MA = 56 522 000	1RT all values correct 1MA adding values Note: NO mark for answer	(2)	DH2
	3.1.3	$\frac{4\ 442\ 500 ✓RT}{56\ 522\ 000} \times 100$ ✓M = 7,9% ✓CA	1RT correct value 1M concept of percentages 1CA final answer	(3)	DH2
	3.1.4	Western and Eastern Cape ✓RT The difference is: 6 508 700 – 6 497 100 ✓M = 11 600 ✓CA Because the numbers are so large, it will be possible to have the same percentage. ✓J	1RT for both provinces 1M subtracting 1CA difference 1J explanation	(4)	DH4
3.2	3.2.1	Discrete data ✓✓A	2A correct answer	(2)	DH1
	3.2.2	22 26 28 30 32 33 34 34 34 34 35 37 38 42 43 45 46 48 49 52 56 65 69 73 75 79 83 84 88 92 ✓MA Median = $\frac{43+45}{2}$ ✓M Median = 44 ✓CA	MA arranging M concept of median CA final answer **AO**	(3)	DH2

Q		ANSWER	EXPLANATION	MARKS	LEVEL
	3.2.3	$48{,}53 = \frac{24+46+\cdots+A}{30}$ ✓M $48{,}53 \times 30 = A + 1\,430$ ✓M $1\,455{,}9 - 1\,430 = A$ ✓M $A = 26$ ✓CA	M concept of mean M multiply by 30 M subtract 1 430 CA final answer **NPR**	(4)	DH 3
3.3	Range = 2,04 – 0,82✓M Range = 1,22 m ✓CA ✓M $0{,}82 \times 2 = 1{,}64$ m ✓CA His statement is INCORRECT. ✓J **OR** Range = 2,04 – 0,82✓M Range = 1,22 m✓CA $= \frac{1{,}22\ m}{2}$ ✓M = 0,61 m ✓CA His statement is INCORRECT. ✓J		M concept of range CA range value 1M multiply/divide by 2 CA final answer J justification	(5)	DH3
				[25]	

QUESTION 4					
Q		**ANSWER**	**EXPLANATION**	**MARKS**	**LEVEL**
4.1	4.1.1	Income = R32 542,80 × 12 = R390 513,60 ✓A ✓MA Pension = 7,5% × R32 542,80 × 12 = R29 288,52 ✓CA **OR** Pension = R390 513,60 × 7,5% = R29 288,52 ✓MCA Total = R390 513,60 − R29 288,52 = R361 225,08 ✓CA	1A for annual gross income 1MA multiplication of both percentages 1CA pension fund contribution 1MCA subtraction 1CA final answer	(5)	F2
	4.1.2	Medical Tax Credit = R728 + R728 + (R246 × 4) ✓RT ✓CA = R2 440 × 12 = R29 280 ✓CA	1RT for both values 1CA monthly value 1CA annual value	(3)	F2
	4.1.3	✓RT ✓SF Tax = R42 678 + 26%(R361 225,08 − R237 100) = R42 678 + R32 272,52 ✓S = R74 950,52 ✓CA ✓MA = R74 950 − R17 235 − R29 280 = R28 435,52 = R28 435,52 ÷ 12 ✓M = R2 369,63 ✓CA	**CA from Q 4.1.1 and Q 4.1.2** 1RT correct tax bracket 1SF substitution into formula 1S simplification 1CA tax before rebates 1MA subtracting both rebate and medical credit 1M dividing by 12 1CA final answer	(7)	F4

Q		ANSWER	EXPLANATION	MARKS	LEVEL
	4.1.4	Annual income $= R10\ 321 \times 12$ ✓MA $= R123\ 852$ ✓A Her income is below the tax threshold of R148 217, thus his statement is valid. ✓J **OR** $= \frac{R148\ 217}{12}$ ✓MA = R12 351,42 ✓A Her income is below the tax threshold of R148 217, thus his statement is valid. ✓J	1MA multiply/divide by 12 1A correct answer 1J conclusion	(3)	F2
	4.1.5	✓RT ✓SF Fixed $= R121\ 475 + 36\%(673\ 000 - 512\ 800)$ = R121 475 + R57 672 ✓S $= R179\ 147$	1RT correct tax bracket 1SF substitution max value. 1S simplification	(3)	F2
4.2	4.2.1	56 kg ✓✓A	2A correct answer (Accept 57 kg)	(2)	DH1
	4.2.2	50 represents the lower 25% of the data ✓✓J **OR** It is 25% of the data represented. **OR** It represents 25% of the data. **OR** 50 represents the lower quartile/first quartile	2J justification/ explanation	(2)	DH4
	4.2.3	Male $= 87 - 61$ Male $= 26$ kg ✓A Female $= 68 - 50$ Female $= 18$ kg ✓A Difference 26 kg – 18 kg = 8 kg ✓CA His statement is incorrect. ✓J	1A IQR of males Accept calculations with 88 and 62 1A IQR of females Accept calculations with 67 and 50 1CA difference 1J justification/ conclusion	(4)	DH4
4.3	4.3.1	Deposit $= 15{,}8\% \times R319\ 999$ ✓MA $= R50\ 559{,}84$ ✓A	1MA multiplying % 1A Answer	(2)	F2

		ANSWER	EXPLANATION	MARKS	LEVEL
	4.3.2	Time of loan $= 60$ months $\div 12 = 5$ years ✓A Interest $=$ R269 439,15 $\times$ 13,45% $\times$ 5 ✓MA = R181 197,83 = R181 197,83 + R269 439,15 = R450 636,98 ✓CA Instalment $=$ R450 636,98 $\div$ 60 ✓MCA $=$ R7 510,62 ✓CA **OR** ✓RT ✓RT R7 579,62 – R69,00 ✓M = R7 510,62 ✓✓CA **OR** ✓RT ✓RT Instalment = R450 636,98 $\div$ 60✓M = R7 510,62✓✓CA	1A answer number of years. 1MA simple interest formula 1CA for addition to principal loan amount 1MCA dividing by 60 1CA answer	**(5)**	F3
	4.3.3	VAT exclusive $=$ R69 $\div$ 1,14 ✓MA $=$ R60,53 ✓A **OR** VAT exclusive $=$ R69 $\times \frac{100}{114}$ ✓MA $=$ R60,53 ✓A **OR** = R69 $\times \frac{14}{114}$ ✓MA = R8,47 $\therefore R60{,}53 - R8{,}47$ = R60,53 ✓A	1MA dividing by 1,14 1A answer	(2)	F2
	4.3.4	Closing balance $=$ R443 126,36 $-$ R69 ✓MA ✓RT $=$ R443 057,36 **OR** ✓RT $=$ R443 057,36 + R7 579,62 ✓MA = R450 636,98	1MA subtracting service fee. 1RT both values 1MA adding total amount due to total balance carried forward 1RT both values	(2)	F1
				[40]	

QUESTION 5					
		ANSWER	**EXPLANATION**	**MARKS**	**LEVEL**
5.1	5.1.1	Timeframe = 2 years × 2 half = 4 halves ✓A 1st half = R13 000 × $\frac{17,59\%}{2}$ ✓MA = R1 143,35 + R13 000 = **R14 143,35** ✓A 2nd half = R14 143,35 × $\frac{17,59\%}{2}$ = R1 243,91 + R14 143,35 = **R15 387,26** ✓CA 3rd half = R15 387,26 × $\frac{17,59\%}{2}$ = R1 353,31 + R15 387,26 = **R16 740,57** ✓CA 4th half = R16 740,57 × $\frac{17,59\%}{2}$ = R1 472,33 + R16 740,57 = **R18 212,90** ✓CA	1A number of calculations. 1MA concept of compound interest 1A answer first half. 1CA answer 2nd half. 1CA answer 3rd half. 1CA answer 4th half. Accept answers with 8,795% calculations	(6)	F3
	5.1.2	Interest = R18 212,90 − R13 000 ✓MCA = R5 212,90 ✓CA	**CA 5.1.1** 1MCA subtracting principal value 1CA answer	(2)	F1
5.2	5.2.1	Total = 190 ton + 170 ton + 120 ton + 100 ton + 80 ton + 60 ton + 380 ton + 130 ton + 100 ton + 90 ton + 140 ton + 90 ton + 90 ton + 60 ton + 320 ton + 70 ton + 300 ton + 750 ton ✓MA Total = 3 240 tonnes ✓A = 3 200 ton	1MA adding all correct values 1A answer	(2)	DH1
	5.2.2	% = $\frac{100T✓RT}{3\ 200T}$ × 100 ✓M = 3,125% = 3 ✓CA **OR** % = $\frac{100T✓RT}{3\ 240T}$ × 100✓M = 3,086% = 3 ✓CA	RT both correct values M concept of percentage CA rounded answer	(3)	DH2
	5.2.3	South Africa 90 tonnes ✓RT Australia 320 tonnes ✓RT If you look at the information on the annexure, South Africa's production is much smaller than Australia. If you compare the production of the countries, South Africa's production will be able to fit almost 5 times into Australia. Australia has more resources available than South Africa. ✓J	1RT South Africa 1RT Australia 1J justification	(3)	DH4

		ANSWER	EXPLANATION	MARKS	LEVEL
5.3	5.3.1	40 years ✓✓A	2A correct answer	(2)	DH1
	5.3.2	Impossible **OR** 0 ✓✓A	2A correct answer	(2)	P1
	5.3.3	The graph increases until 40 ✓A and then decreases from 40 to 60. ✓A From 10 to 20, most boys are active, and they exercise often. From 20 to 40, men are active, but not as fit as they were between 10 and 20. From 40 to 60, men are not as active as they should be, thus they do not work as hard as they did from 20 to 40. ✓✓J	1A increase 1A decrease 2J justification	(4)	DH4
				[24]	
				[150]	