education

Department of Education
FREE STATE PROVINCE

MID - YEAR EXAMINATION

GRADE 12

MATHEMATICAL LITERACY

MARKING GUIDELINES

PAPER 2

MARKS: 100

SYMBOL/KODE	EXPLANATION/VERDUIDELIKING
M	Method/Metode
MA	Method with accuracy/Metode met akkuraatheid
CA	Consistent accuracy/Volgehoue akkuraatheid
A	Accuracy/Akkuraatheid
C	Conversion/Herleiding
S	Simplification/Vereenvoudiging
RT	Reading from a table/graph/map/diagram/Lees vanaf tabel/kaart/grafiek/diagram
SF	Correct substitution in a formula/Korrekte vervanging in formule
O	Opinion/Explanation/Reasoning /Opinie/Verduideliking/Redenasie
P	Penalty, e.g. for no units, incorrect rounding off, etc./Penalisering, bv. vir geen eenhede/verkeerde afronding, ens.
R	Rounding off/Afronding
NPR	No penalty for rounding/Geen penalisering vir afronding nie
AO	Answer only/Slegs antwoord
MCA	Method with constant accuracy/Metode met volgehoue akkuraatheid

These marking guidelines consist of 07 pages.
Hierdie nasienriglyne bestaan uit 07 bladsy

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NOTE:

- If a candidate answers a question TWICE, only mark the FIRST attempt.
- If a candidate has crossed out (cancelled) an attempt to a question and NOT redone the solution, mark the crossed out (cancelled) version.
- Consistent accuracy (CA) applies in ALL aspects of the marking guidelines; however it stops at the second calculation error.
- Note: consistent accuracy (CA) does not apply in cases of a breakdown.
- If the candidate presents any extra solution when reading from a graph, table, layout plan and map, then penalise for every extra item presented.

As a general marking principle, if a candidate has incurred one mistake and there is evidence of sound mathematics thereafter, then that candidate should lose one mark only

LET WEL:

- As 'n kandidaat 'n vraag TWEE KEER beantwoord, merk slegs die EERSTE poging.
- As 'n kandidaat 'n antwoord van 'n vraag doodtrek (kanselleer) en nie oordoen nie, merk die doodgetrekte (gekanselleerde) poging.
- Volgehoue akkuraatheid (CA) word in ALLE aspekte van die nasienriglyne toegepas, dit hou op by die tweede berekeningsfout.
- *Let wel: volgehoue akkuraatheid (CA) geld nie in die geval van 'n afbreuk nie.*
- Wanneer 'n kandidaat aflesings vanaf 'n grafiek, tabel, uitlegplan en kaart geneem en ekstra antwoorde gee, penaliseer vir elke ekstra item.
- *'n Algemene merkbeginsel is dat indien 'n kandidaat een fout maak en daarna voortgaan met* korrekte wiskunde, dat die kandidaat slegs een punt verloor.

QUESTION/VRAAG 1 [20 MARKS/PUNTE]			
Q/V	**Solution/Oplossing**	**Explanation/Verduideliking**	**T/L**
1.1.1	Thermometer ✓ ✓A	2A correct instrument (2)	M L1 E
1.1.2	36.8 ^{0}C ✓ ✓A 36,8 ^{0}C	2A correct reading **NPU** (2)	M L1 E
1.1.3	B ✓ ✓A	2A correct answer (2)	M L1 E
1.2.1	✓A ✓A Twenty to eleven in the morning	1A twenty to eleven 1A morning (2)	M L1 E
1.2.2	✓ ✓A 13:50	2A correct time (2)	M L1 E
1.2.3	14:10 – 10:40 ✓ MA = 3 hours and 30 minutes = 3,5 hours ✓ C	1MA subtraction 1C conversion to hours (2)	M L1 M

	Solution/Oplossing	Explanation/Verduideliking	T/L
1.3.1	Number Scale/Ratio/Numeric ✓A ✓A 1 cm on the scale drawing is 50 cm in real life /1 cm op die skaaltekening is 50 cm in die werklikheid . OR 1 unit on the map / paper is equivalent to 50 units in real life /on the ground . 1een heid op die kaart / papier is ekwivalent aan 50 eenhede in werklikheid/op die ground.	1A correct name 1A correct meaning (2)	MP L1 E
1.3.2	✓✓A A scaled drawing of an office viewed from above.	2A correct explanation (2)	MP L1 E
1.3.3	10 ✓✓A	2A correct no of people (2)	MP L1 E
1.3.4	False ✓✓A	2A correct answer (2)	MP E L1
		[20]	

QUESTION/VRAAG 2 [27 MARKS/PUNTE]			
Q/V	**Solution/Oplossing**	**Explanation/Verduideliking**	**T/L**
2.1.1	557 km ✓ ✓RT	2RT correct distance **NPU** (2)	**MP** **L1** **E**
2.1.2	C ✓ ✓A	2A correct answer (2)	**MP** **L2** **M**
2.1.3	✓✓RT N3	2RT correct answer (2)	**MP** **L2** **E**
2.1.4	Pietermaritzberg ✓ ✓A	2A correct answer (2)	**MP** **L1** **E**
2.2.1	(a) B ✓A (b) A ✓A (c) R ✓A	3A correct answer (3)	**MP** **L2** **E**
2.2.2	$\frac{1}{8}$ ✓ ✓A	1A numerator 1A denominator (2)	**MP** **L2** **E**
2.3.1	NE East of North ✓ ✓A	2A correct direction (2)	**MP** **L2** **E**
2.3.2	The scale enlarges or reduces with the map. ✓ ✓A	2A correct explanation (2)	**MP** **L2** **E**
2.3.3	Measured Bar scale = 4,3 cm ✓A 4,3 cm = 125 km ✓MA 4,3 cm = 12 500 000 cm ✓C 1 : 2 906 976,744 ✓CA NB: **Check the measurement on the final paper**	(±1) 1A Measured value. 1MA equating to 125 1C conversion 1CA correct answer (4)	**MP** **L3** **E**

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2.3.4	Measured distance = 5,6 cm ✓A $\frac{5,6 \times 2\,906\,976,744}{100\ 000}$ ✓MA ✓C = 162,79 km ✓CA Reading from table 170 km ✓RT He is correct ✓O	1A measured value ((±1) 1MA using the no scale 1C conversion 1CA correct answer 1RT correct distance 1O Conclusion (6)	**MP L4 M**
		[27]	

QUESTION/VRAAG 3 [24 MARKS/PUNTE]			
Q/V	**Solution/Oplossing**	**Explanation/Verduideliking**	**T/L**
3.1.1	A = s× s = 42 cm × 42 cm ✓ SF = 1764 cm^2 ✓A	1SF correct substitution 1A correct answer (2)	M L2 E
3.1.2	42 cm – 40 cm ✓MA = 2 cm ✓A 2 ÷ 2 = 1 cm✓A	1A subtraction 1A correct answer 1A correct answer (3)	M L2 M
3.1.3	V = **3,142 × radius^2× height** ✓A ✓C = 3,142 × $(\frac{40}{2})^2 \times (\frac{20}{10})$ ✓SF = 2513 ,6 cm^3 ✓CA	1A radius 1C conversion 1SF correct substitution 1 CA (4)	M L2 M
3.1.4	A = $\frac{3,142\ x\ radius^2}{8}$ ✓SF = $\frac{3,142 \times (20)^2}{8}$ ✓MA = 157 , 1 cm^2	1SF correct substitution 1MA dividing by 8 (2)	M L2 E
3.2.1	**Perimeter = 2 × (length + width)** = 2 (8 feet + 6 feet) ✓ SF = 28 feet ✓ CA	1SF correct values 1CA answer (2)	M L2 E

3.2.2	Length = 8 feet – (2×1) = 6 feet ✓MA ✓A Width = 6 feet – (2×1) = 4 feet ✓A Height = 5 feet – 1 foot = 4 feet ✓A	1MA subtracting the thickness. 1A answer 1A answer 1 A (4)	M L3 M
3.2.3	**Volume = Length × Width × Height** = 6 feet x 4 feet x 4 feet ✓MCA = 96 feet^2 ✓ CA✓ A	**CA from 3.2.2** 1MCA substitution 1CA answer 1A unit (3)	M L2 E
3.2.4	SA = **(length × width) + 2 (length × height) + 2 (width × height)** = (6 x 4) + 2 x (6 x 4) + 2 x (4 x 4) ✓SF = 24 + 48 + 32 = 104 **feet**^{2} ✓CA 1,785 l = 65 feet^2 104 feet^2 will need 2,785 l ✓CA OR 3 l will cover the area of 109,24 feet^2 Statement is valid ✓O **Using outside dimensions 3/4**	1SF correct values 1CA answer 1CA no of litres/area 1O Conclusion (4)	M L3 M
		[24]	

QUESTION/VRAAG 4 [29 MARKS/PUNTE]			
Q/V	**Solution/Oplossing**	**Explanation/Verduideliking**	**T/L**
4.1.1	42 ÷ 0,264172 ✓MA = 158,98 l ✓ CA = 159 l ✓R	1MA dividing correct values. 1CA answer 1 R rounded value (3)	M L2
4.1.2	30 000 × 0 , 264172 ✓MA = 7 925 , 16 gallons ✓ CA ∴ 7 925 ,16 gallons ÷ 42 gallons ✓MCA = 188 ,69 ✓ CA He is correct ✓O	1MA multiplying correct values. 1A no of gallons 1MCA diving by 42 1CA answer 1O conclusion	M L3 M

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	✓A ✓✓A 30 000 ÷ 158,98 = 188,69 ✓CA He is correct ✓O	1A numerator 2A denominator 1CA answer 1O conclusion (5)	

4.1.3	✓MA 1 398 km ÷ 100 = 13,98 ✓A 13,98 × 24 = 335,52 ℓ ✓CA 335,52 ℓ × R 20,20 / ℓ ✓MCA = R 6 777,50 ✓CA ∴ R6 777,50 × 2 = R 13 555,00 ✓CA Incorrect ✓C	1MA dividing by 100 1A answer 1CA answer 1MCA multiplying with the rate R 20,20/ℓ 1CA answer 1CA 1O Conclusion (7)	M L3 D
4.1.4	Distance = Speed x Time ✓SF 1398 km = 80 km/h x time ✓MA Time = 1398 km ÷ 80 km/h ✓CA = 17,475 hours + 60 min (1 hour) = 18,475 ✓MCA = 0,475 x 60 = 28,9 = 29 minutes ✓C = 18 hours and 29 minutes Arrival time = 10:30 + 18 hours and 29 minutes ✓MCA = 04:59 the following day ✓CA	1SF correct substitution 1MA changing the subject 1CA answer 1 MCA hours 1C conversion 1MCA addition 1CA time of arrival (7)	M L3 M
4.2.1	Two exits ✓✓A	2A correct no of exits (2)	MP L2 E
4.2.2	48 ✓✓A	2A correct number of seats (2)	MP L1 E
4.2.3	✓A ✓A She must move to the right pass F6 and then turn left, then continue straight towards row R . R24 will be on the left . ✓A	1A Pass F6 1A Turn left 1A R24 will be on the left (3)	MP L2 M
		[29]	