education

Department of Education
FREE STATE PROVINCE

PREPARATORY EXAMINATION
VOORBEREIDENDE EKSAMEN

GRADE/*GRAAD* 12

MATHEMATICAL LITERACY P2
WISKUNDIGE GELETTERDHEID V2



SEPTEMBER 2024

MARKS/*PUNTE*: 150

MARKING GUIDELINES/*NASIENRIGLYNE*

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/a graph/document/diagram/*Lees vanaf tabel/'n grafiek/dokument/ diagram*
SF	Correct substitution in a formula/*Korrekte vervanging in 'n formule*
O	Opinion/Explanation/*Opinie/Verduideliking*
P	Penalty, e.g. for no units, incorrect rounding off, etc./*Penalisasie, bv. vir geen eenhede, verkeerde afronding ens.*
R	Rounding off/*Afronding*
NPR	No penalty for correct rounding/*Geen penalisasie vir korrek afronding nie*
AO	Answer only/*Slegs antwoord*
MCA	Method with constant accuracy/*Metode met volgehoue akkuraatheid*
NPU	No penalty for unit/*Geen penalisasie vir eenheid nie*

These marking guidelines consists of 11 pages.
Hierdie nasienriglyne bestaan uit 11 bladsye.

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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.
- If the candidate presents any extra solution when reading from a graph, table, layout plan and map, then penalise for every extra item presented.
- General principal of marking: If the candidate makes one mistake, he/she loses one mark.

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.*
- *Wanneer 'n kandidaat aflesings vanaf 'n grafiek, tabel, uitlegplan en kaart geneem en ekstra antwoorde gee, penaliseer vir elke ekstra item.*
- *Die algemene beginsel van merk: as 'n leerder een fut maak verloor hy/sy een punt.*

QUESTION/*VRAAG* 1 [28 MARKS/*PUNTE*]		**ANSWER ONLY FULL MARKS**	
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
1.1.1	Top view/Bird's eye ✓✓A	2A correct view (2)	MP L1 E
1.1.2	The maximum number of spectators that soccer city stadium can accomodate.✓✓A	2A correct definition (2)	M L1 E
1.1.3	Nasrec road ✓✓A	2A correct road (2)	MP L1 E
1.1.4	Ticket clearing points = 09 ✓A Entrances = 19 ✓A	1A correct number 1A correct number (2)	MP L1 E
1.1.5	$\frac{85}{100}$ × 88 000 = 74 800 ✓MA 88 000 – 74 800 = 13 200✓A OR 100% - 85% = 15%✓MA $\frac{15}{100}$ x 88 000 = 13 200✓A	1MA % calculation 1A answer 1MA % calculation 1A answer (2)	M L1 M
1.2.1	Total no of washers = 9 + 8 ✓MA = 17 ✓A	1MA adding correct values 1A correct total number of washers (2)	MP L1 E

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1.2.2	To study ✓✓A	2A opinion (2)	MP L1 E
1.2.3	G ✓✓A	2A correct symbol (2)	MP L1 M
1.2.4	10 ✓✓A	2A number of screws (2)	MP L1 E
1.2.5	✓MA 4 × 15 = 60 desks ✓A	1MA multiply correct numbers 1A no of deskes (2)	MP L1 E
1.3.1	✓MA 44cm + 20 cm = 64cm ✓A	1MA adding correct values 1A correct answer (2)	M L1 E
1.3.2	Grey ✓✓A	2A correct colour (2)	M L1 E
1.3.3	Parts have already been put together ✓✓A OR The laptop stand does not need to be reconstructed.	2A correct statement (2)	MP L1 D
1.3.4	27 × 10 ✓MA = 270mm ✓A	1MA multiply by 10 1A correct answer (2)	M L1 E
		[28]	

QUESTION/*VRAAG* 2 [30 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation** ***Verduideliking***	**T&L**
2.1.1	North East (NE) ✓✓A	2A correct direction (2)	MP L2 M
2.1.2	$\frac{2}{3}$ ✓A ✓A	1A numerator 1A denominator (2)	P L2 E
2.1.3	✓✓O The type of route of the the marathon. The weather during the day of the marathon ✓✓O	2O correct opinoin 2O correct opinion (4)	MP L4 M
2.1.4	Asakusa Station ✓✓A	2A correct station (2)	MP L1 E
2.1.5	✓MA 42 km – 40 km = 2 km ✓A	1MA correct values 1A answer **AO** (2)	MP L1 E
2.1.6	3✓✓A	2A correct no of turns (2)	MP L1 E
2.1.7 (a)	Because it is people with different disabilities ✓✓O OR Beacause of different impairments ✓✓O OR They may run into each other✓✓O	2O correct opinion 2O correct opinion 2O correct opinion (2)	MP L4 E
2.1.7 (b)	T46 = 3 960 – 1 700 – 1 580 ✓MA = 680 ✓CA 1 700 : 680 : 1 580 85 : 34 : 79✓ CA	1MA subtracting the two values 1CA simplification 1CA simplified ratio (3)	MP L2 M

Q/*V*	**Solution/*Oplossing***	**Explanation** ***Verduideliking***	**T&L**
2.2.1	5 (five) ✓✓A	2A correct number (2)	MP L1 E
2.2.2	Mpumalanga ✓✓A	2A correct province (2)	MP L2 E
2.2.3	Bar Scale = 22 mm ✓A Map Distance from Edenburg to Bloemfontein = 21 mm ✓A ✓MA Actual distance = $\frac{21}{22}$ x 60km ✓MA = 57,3 km ✓CA There was a direct measurement on the map not taking into accout that the road is not straight when you travel✓✓O	1A correct measurement 1A correct measurement 1MA correct fraction 1MA multiply by 60 1CA simplification (7)	MP L4 M
		[30]	

QUESTION/*VRAAG* 3 [26 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation** *Verduideliking*	**T&L**
3.1.1	55 × 4,546092 ℓ ✓MA = 250,03506 ℓ ✓A ≈ 250 ℓ ✓R	1MA multiplying 1A correct litres 1R rounding down (3)	M L2 E
3.1.2	Cheece ✓A Yogurt ✓A	1A porduct 1A product (2)	M L1 E
3.1.3	Length = 48 inch = 121,92 cm ✓C Width = 40 inch = 101,60 cm Height = 46 inch = 116,84 cm ✓SF Volume = 121,92 cm × 101,60 cm × 116,84 cm = 1 447 305,492 cm^3 ✓CA = 1 447 305,492 mℓ ÷ 1 000 ✓C = 1 447,305492 ℓ ÷ 4,546092 ✓C = 318,3625612 gallons = 318 gallons ✓CA It can hold more than 310 gallons OR Volume = 48 inches × 40 inches × 46 inches ✓SF = 88 320 $inches^3$ ✓SF 88 320 × 2,54 × 2,54 × 2,54 ✓C = 1 447 305,49248 cm^3 = 1 447 305,49248 m ℓ ✓C = 1 447,30549248 ℓ 1 gallon = 4,546092 ℓ $\frac{1447,30549248}{4,546092}$ ✓C = 318,36 gallons✓CA It can hold more than 310 gallons	1C conversion to cm 1SF substitution 1CA simplification 1C conversion to litres 1C conversion to gallons 1CA no of gallons 1SF substitution 1CA simplification 1C conversion to cm 1C conversion to litres 1C conversion to gallons 1CA no of gallons (6)	M L3 D

3.1.4	✓MA ✓C Radius = 11,25 inch = 28,575 cm = 0,28575 m Height = 33 inch = 83,82 cm = 0,8382 m ✓C **Surface area of a cylinder (in m^2)** **= (2 ×3,142 ×r^2) + (2 × 3.142 × r × h)** = (2 × 3,142 × 0,28575^2) + (2 × 3,142 × 0,28575 × 0,8382) ✓SF = 0,5131078448 + 1,505116345 ✓S ✓CA = 2,018224189 m^2 ÷ 2,5 ✓MCA = 0,81 litres of paint ✓CA = 1 tin of paint ✓R	1MA radius 1C conver inc to cm 1C conver cm to m 1SF substitution into the formula 1S simplification 1CA answer 1MCA conversion to litres 1CA answer 1R no of tins (9)	M L3 D
3.2.1	Measuring tape ✓✓A	2A correct tool (2)	M L1 E
3.2.2	Animal weight in pounds = $\frac{(\text{girth})^2 \times \text{body length}}{300}$ = $\frac{70 \times 70 \times 78}{300}$ ✓SF = 1274 pounds ✓A Conversioin to kg = $\frac{1274 \text{ pounds}}{2,2046}$ ✓C = 577,88 kg ✓CA	1SF substitution into the formula 1A simplification 1C conversion 1CA answer (4)	M L2 M
		[26]	

QUESTION/*VRAAG* 4 [41 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation** ***Verduideliking***	**T&L**
4.1.1	Franschhoek ✓✓A	2Acorrect town (2)	MP L1 E
4.1.2 (a)	08:30 + 1 hour 57 minutes ✓MA = 10:27 ✓A	1MA adding 1A correct time (2)	M L2 M
4.1.2 (b)	Distance from Paarl to Waterfront mall = 36km + 25km + 2 km = 63km ✓A Time = 58 min + 7 min = 65 min ✓A Distance = speed × time 63 km = speed × **(65** ÷ 60) ✓SF Speed = $\frac{63\ km}{(65 \div 60)}$ ✓S ✓C = 58,15 km/h ✓CA	1A total distance 1A time 1SF substitution of distance and time 1S changing subject 1C conversion 1CA answer (6)	M L2 M
4.1.3	Grabouw ✓✓A	2A correct town (2)	MP L2 M
4.2.1	3 × 4 = 12 4 × 2 = 08 ✓M 12 + 08 = 20 players ✓A	1M adding values 1Ca no of players (2)	M L2 E
4.2.2	Total distance travelled from the place of depature and back. ✓✓A	2A correct statement (2)	M L1 E
4.2.3	R2 800 × 3 = R8 400 R2 950 × 4 = R11 800 ✓M R3 200 × 1 = R 3 200 Total amount = R23 400 ✓CA For two nights = R23 400 × 2 = R46 800 ✓MCA Petrol cost No of litres = $\frac{10,5 \times\ 2\ 769,2}{100}$ ✓MA = 290,766 ✓A Cost = 290,766 × 22,46 = R6 530,60 ✓MCA Total Amount = R46 800 + R6 530,60 = R53 330,60 ✓MCA 50% = R26 665,30 ✓A Each member will pay = $\frac{R26\ 665,30}{21}$ ✓A = R1 269,78	1M amount per rooms 1CA total amount 1MCA amount for two nights 1MA calculating no of litres 1A no of litres 1MCA petrol amount 1MCA total amount 1A 50% 1A division by 21 (9)	F M L3 D

Q/*V*	**Solution/*Oplossing***	**Explanation** ***Verduideliking***	**T&L**
4.3.1	0% ✓✓A	2A correct probability (2)	P L1 E
4.3.2	188 cm = 1,88 m ✓C BMI = $\frac{80\ kg}{(1{,}88\ \text{m})^2}$ ✓SF = 22,63 kg/m^2 ✓A Normal ✓MCA	1C conversion 1SF substitution 1A correct BMI 1MCA status (4)	M L2 M
4.3.3 (a)	Goal Shooter ✓A Goal Attack ✓A Wing Attack✓A	1A 1st player 1A 2nd player 1A 3rd player (3)	M L1 M
4.3.3 (b)	D = 900 mm ✓C = 0,9 m ÷ 2 = 0,45 m ✓A Difference = 4,9 m – 0,45 m ✓MA = 4,45 m ✓CA	1C conversion 1A radius 1MA subtracting 1CA answer (4)	M L2 M
4.3.3 (c)	✓SF Area of rectangle = (10,17 m × 3) × 15,25 m ✓MA = 30,51 m × 15,25 m = 465,2775 m^2 ✓CA	1SF 10,71 and 15,25 1MA correct length 1CA answer **NPR** (3)	M L2 M
		[41]	

QUESTION/*VRAAG* 5 [25 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation** *Verduideliking*	**T&L**
5.1.1	There are no walls separating the living room and the kitchen ✓✓O	2O opinion (2)	MP L4 E
5.1.2	0% ✓✓A	2A correct percentage (2)	P L1 E
5.1.3 (a)	Area of a rectangle = length ×width = 3 m ×3 m ✓SF = 9 m^2 ✓A No of 5*l* of Carpet glue = 9 m^2 ÷ 3 m^3 ✓MCA = 3 ✓CA	1SF correct values 1A area 1MCA dividing 1CA no of 5 ℓ (4)	M L2 M
5.1.3 (b)	Total cost ✓RT ✓MCA = (3 ×R359) + (9 ×R550) + (9 ×R400) = R1 077 + R4 950 + R3 600 ✓MCA = R9 627,00 ✓CA	**CA from 5.1.3 (a)** 1RT all costs 1MCA multiplying costs with numbers 1MCA adding all the values 1CA cost (4)	F L2 M
5.2.1	Height of the box = 31,8 cm = 0,318m ✓C Number of layers = $\frac{2,4m}{0,318m}$ ✓MA = 7,547…✓CA = 7 layers ✓R His Statement is VALID.✓O	1C conversion 1MA dividing 1CA no of layers 1R rouding down 1O opinion (5)	MP L4 M