education

Department of Education
FREE STATE PROVINCE

PREPARATORY EXAMINATION
VOORBEREIDENDE EKSAMEN

GRADE/*GRAAD* 12

MATHEMATICAL LITERACY P2
WISKUNDIGE GELETTERDHEID V2

SEPTEMBER 2025

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 consist of 12 pages.
Hierdie nasienriglyne bestaan uit 12 bladsye.

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Please turn over/*Blaai om asseblief*

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 principle 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	C ✓✓A A plan that shows the length and width of an object.✓✓	2A explanation (2)	MP L1 E
1.1.2	H ✓✓A The maximum amount that a container can hold✓✓	2A explanation (2)	M L1 E
1.1.3	G ✓✓A The base unit of mass in the metric system is equal to 1 000 grams. ✓✓	2A explanation (2)	M L1 E
1.1.4	D ✓✓A The amount of matter or material in an object. ✓✓	2A explanation (2)	M L1 E
1.1.5	E ✓✓A The length of the space between two places or points. ✓✓	2A explanation (2)	M L1 E

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Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
1.2.1	The area of the room is 22 m^2. ✓✓A *Die oppervlak van die kamer is 22 m^2*	2A explanation (2)	M L1 M
1.2.2	0% **OR/*OF*** zero percent ✓✓A	2A correct probability **NPU** (2)	P L1 E
1.2.3	Floor plan/*Vloerplan* ✓✓A **OR/*OF*** Layout plan/*Uitlegplan* ✓✓A	2A correct answer (2)	MP L1 E
1.2.4	325 ✓✓A	2A correct room number (2)	MP L1 E
1.2.5	The one has a double bed and the other one has two single beds./*Die een het 'n dubbelbed en die ander twee enkelbeddens.* ✓✓A **OR/*OF*** First room can accomodate one person, the second room can accomodate two people./*Eerste kamer kan een persoon akkomodeer. Die tweede kamer kan twee persone akkomodeer.* ✓✓A **OR/*OF*** The one has one study table, and the other one has two./*Die een het een studietafel en die ander een het twee.* ✓✓A **OR/*OF*** The one has one chair and the other one has two chairs./*Die een het een stoel en die ander een het twee.* ✓✓A **OR/*OF*** The one has one sidelamp and the other one has two sidelamps./*Die een het een lampie en die ander een het twee.* ✓✓A	2A correct difference (2)	MP L1 E

Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
1.3.1	2 × 1 000 ✓MA = 2 000 m ✓A	1MA multiplied by 1000 1A correct answer **NPU** (2)	M L1 E
1.3.2	True/*Waar* ✓✓A	2A correct answer (2)	MP L1 E
1.3.3	19:49 ✓✓A	2A correct time format (2)	M L1 M
1.3.4	24 – 7 ✓MA = 17 min ✓A	1MA subtracting correct values 1A correct answer **NPU** (2)	M L1 E
		[28]	

QUESTION/*VRAAG* 2 [25 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
2.1.1	2 ✓✓A	2A correct answer (2)	MP L1 E
2.1.2	Nelspruit ✓✓A	2A correct town (2)	MP L2 E
2.1.3	✓RT 28 km + 18 km + 3,5 km ✓MA = 49,5 km ✓CA	1RT correct values 1MA adding values 1CA no of kilometres **NPU** (3)	MP L2 D
2.1.4	Machadodorp✓✓A	2A name of the toll plaza (2)	MP L1 E
2.1.5	✓A ✓A R539 and/*en* R36 Accept: R53	1A 1st road 1A 2nd road (2)	MP L1 M
2.2.1	3 or three/*of drie* ✓✓A	2A number of windows (2)	MP L1 M
2.2.2	False/*On*waar ✓✓A	2A correct answer (2)	MP L4 M
2.2.3	Measured length/*gemete lengte* = 125 mm✓A 125 mm = 11,5 m ✓MCA ✓C 0,125 : 11,5 1: 92 ✓CA	1A measured value (accept 120 mm to 125 mm) 1MCA correct order of the ratio 1C conversion 1CA unit ratio (4)	MP L2 D
2.2.4	There is no wall between the kitchen and the living/lounge/dining/sitting room/*Daar is geen muur tussen die kombuis en die sitkamer/eetkamer nie.* ✓✓A	2A opinion (2)	MP L4 M
2.2.5 (a)	An elevation plan shows the side view of the outside of the building./*'n Aansigplan toon die sy-aansig van 'n gebou.*✓✓A	2A explanation (2)	MP L1 M
2.2.5 (b)	South Elevation/*Suidaansig* ✓✓A	2A correct elevation (2)	MP L2 M
		[25]	

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QUESTION/*VRAAG* 3 [26 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation *Verduideliking***	**T&L**
3.1.1	Thermometer/*Termometer* ✓✓A Accept: Thermostat	2A correct instrument (2)	M L1 M
3.1.2	440 mm – (4 mm × 2) ✓MA = 432 mm ✓CA	1MA subtracting double thickness 1CA simplification **AO** (2)	M L2 M
3.1.3	Diameter/*Middellyn*: 432 mm = 0,432 m ✓C Height/*Hoogte*: 1325 mm – 4 mm = 1321 mm✓A = 1,321 m Radius = $\frac{0,432}{2}$ = 0,216 ✓CA Volume = 3,142 × (radius)^2 × height/*hoogte* = 3,142 × (0,216 m)^2 × 1,321 m ✓SF ✓CA = 0,19364 m^3 × 1000 ✓C = 193,659 ℓ Then/*Dan*: 98% × 193,659 ℓ ✓MCA = 189,78 ℓ ✓CA His claim is not correct./*Sy stelling is nie korrek nie.*✓O **OR/*OF*** 185 ℓ = $\frac{185}{1000}$ m^3 = 0,185 m^3 ✓ Radius = $\frac{0,432}{2}$ = 0,216 ✓CA	**CA from 3.1.2** 1C conversion (mm to m) 1A height 1CA radius 1SF substitution into the formula 1CA answer 1C conversion (m^3 to ℓ) 1MCA calculating percentage 1CA number of litres 1O opinion 1C conversion (ℓ to m^3) 1CA radius	M L4 D

	Volume = 3,142 × (radius)^2 × height/***hoogte*** $0{,}185\ m^3 = 3{,}142 \times (0{,}216)^2 \times h$ ✓SF $h = \frac{0{,}185\ m^3}{0{,}146593152\ m^2}$ ✓MA h = 1,262 m ✓CA The given **height of the geyser** is Height/*Hoogte*: 1325 mm – 4 mm = 1321 mm = 1,321 m ✓A so: $\frac{98}{100} \times 1{,}321$ m ✓MCA = 1,294 ✓CA The statement is not correct. ✓O	1SF substitute into formula 1MA changing the subject of the formula 1CA simplification 1A determine height 1MCA calculating 98% of the height 1CA simplify height 1O correct opinion (9)	
3.1.4	°F – 32° = (1,8 × °C) 140° F – 32 = (1,8 × °C) ✓SF 108 = 1,8 × °C $°C = \frac{108}{1{,}8}$ ✓MA = 60° C ✓CA	1SF correct substitution 1MA changing the subject of the formula 1CA simplification (3)	M L2 M
3.2.1	The total length around the rib cage of the cat./*Die totale lengte rondom van die kat se ribbekas.* ✓✓A	2A explanation (2)	M L1 E
3.2.2	BMI/*LMI*✓✓A	2A correct answer (2)	M L1 E
3.2.3	BMI/*LMI* = $\frac{35{,}2\ cm}{0{,}6466} - \frac{5{,}1\ cm}{0{,}9156}$ – 5,1 cm ✓SF = 54,43 – 5,57 – 5,1 ✓S = 43,77 ✓CA Obese/*vetsugtig* ✓O	1SF substitution 1S simplification 1CA answer 1O opinion **NPR** (4)	M L2 D

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
3.2.4	Reduce the amount of food./*Verminder die hoeveelheid kos.* ✓✓O **OR/*OF*** Give low-calorie/healthy food./*Gee lae kaloriekos/gesonde kos.* **OR/*OF*** Cut back on treats./*Verminder lekkernye.* **OR/*OF*** Take the cat for walks/*Gaan stap met die kat.* (2)	2O opinion	M L4 E
		[26]	

QUESTION/*VRAAG* 4 [38 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
4.1.1	Perimeter = 2 × (length + width)/ *Omtrek = 2 × (lengte + breedte)* = 2 × (1,525 m + 2,74 m)✓SF = 8,53 m✓CA✓A	 1SF correct substitution 1CA correct answer 1A unit **NPR** **AO** (3)	M L2 E
4.1.2	✓MA Length/*Lengte* = 0,153 m × 2 + 1,525 m ✓MA = 0,306 m + 1,525 m = 1,831 m ✓CA	 1MA multiplied by 2 1MA adding 1CA correct answer **NPU** **NPR** **AO** (3)	M L2 M
4.1.3	✓RT 0,76 : 0,153 ✓A 1 : 0,201✓CA	 1RT correct values 1A order 1CA answer **NPR** **AO** (3)	M L2 M
4.1.4	0,76 m = 760 mm ✓C 760 mm – 100 mm ✓MA 660 mm = 0,7 m **or/*of*** 0,66 m **or/*of*** 0,67 m✓A **OR/*OF*** 100 mm = 0,1 m ✓C 0,76 m – 0,1 m = 0,66 m = 0,7 m **or/*of*** 0,66 m **or/*of*** 0,67 m✓A	1C conversion 1MA subtraction A correct answer 1C conversion 1MA subtraction A correct answer **NPU** **NPR** (3)	L2 M E

Q/*V*	Solution/*Oplossing*	Explanation *Verduideliking*	T&L
4.1.5 (a)	Boys/*Seuns* = 12✓A Girls/*Meisies* = 09✓A 12 – 09 = 03 ✓CA more players were boys/*meer spelers was seuns*	1A number of boys 1A number of girls 1CA answer **AO** (3)	P L2 E
4.1.5 (b)	✓A $\frac{2}{21}$ = 0,095238095✓CA ✓A	**CA Total from 4.1.5(a)** 1A numerator 1A denominator 1CA answer as decimal number **NPR** (3)	P L2 M

Q/*V*	Solution/*Oplossing*	Explanation *Verduideliking*	T&L
4.2.1	Container/*Houer* 1 Volume = length × width × height *Volume = lengte × breedte × hoogte* = 3,5 in × 2 in × 9,5 in ✓SF = 66,5 in^3 ✓CA Container/*Houer* 2 Volume = π × radius^2 × height/*hoogte* = 3,142 × (5 ÷ 2)^2 × 9,5 ✓SF ✓A = 3,142 × 2,5^2 × 9,5 = 186,56 in^3✓CA Container 2/Cylinder/*Houer 2/Silinder* ✓O	 1SF correct substitution 1CA correct answer 1SF substitution 1A radius 1CA answer 1O opinion **NPU** **NPR** (6)	M L4 M
4.2.2	SA = 2 × π × radius × height + π × radius^2 *BO = 2 × π × radius × hoogte + π × radius^2* = 2 × 3,142 × 2,5 × 9,5 + 3,142 × (2,5)^2 ✓SF = 149,245 + 19,6375 ✓S = 168,8825 in^2 ✓CA	 1SF substitution 1S simplification 1CA answer **NPU** **NPR** (3)	L3 M M

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Q/*V*	Solution/*Oplossing*	Explanation *Verduideliking*	T&L
4.2.3 (a)	1 inch/*dm* = 25,4 mm ? = 40 mm $= \frac{40\text{ mm}}{25{,}4\text{ mm}}$ ✓MA = 1,57 in/*dm* ✓CA	1MA dividing 1CA correct answer **NPU** **AO** (2)	M L2 M
4.2.3 (b)	**CONTAINER 1/*HOUER 1*** Height/*Hoogte* $\frac{9{,}5}{1{,}57}$ ✓MA = 6,050955 ✓CA = 6 ✓R Width/*breedte*: $\frac{2}{1{,}57} = 1{,}27$ ≈ 1 Length/*lengte*: $\frac{3{,}5}{1{,}57} = 2{,}22$ = 2 ✓CA No. that can be packed/*Aantal wat gepak kan word:* ✓MCA 6 × 1 × 2 = = 12 balls/*balle* ✓CA **CONTAINER 2/*HOUER 2*** Height/*Hoogte*: $\frac{9{,}5}{1{,}57} = 6$ Diameter/*Middellyn*: $\frac{5}{1{,}57} = 3$✓CA No that can be packed/*Aantal wat gepak kan word:* 6 × 3 = 18 balls/*balle* ✓CA Statement NOT VALID/*Stelling is NIE WAAR NIE* ✓O	**CA from 4.2.3(a)** 1MA dividing 1CA answer 1R rounding down 1CA correct answer 1MCA multiplying 1CA no of balls 1CA answer 1CA no of balls 1O conclusion (9)	L4 MP D
		[38]	

QUESTION/*VRAAG* 5 [33 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation** ***Verduideliking***	**T & L**
5.1.1	Lesotho ✓✓A	2A name of the country (2)	MP L1 E
5.1.2	✓RT 30 355 × 14,1 % ✓MA = 4 280,055 km^2 $^{=}$4 280 km^2 ✓R	1RT total area 1MA multiplying by % 1R correctly rounded area **NPU** **AO** (3)	MP L2 E
5.1.3	Bar Scale ✓A ✓A When the map enlarges/reduces the scale also enlarges/reduces. *Grafiese skaal* *Wanneer die kaart vergroot/verklein sal die skaal ook vergroot/verklein.*	1A name of the scale 1A advantage (2)	MP L2 M
5.1.4	Two million one hundred and twenty five thousand two hundred and sixty eight./*Twee miljoen een honderd en vyf en twintig duisend twee honderd agt en sestig.* ✓✓A	2A correct answer (2)	MP L1 E
5.1.5	South East/SE/*Suidoos/SO* ✓✓A	2A direction (2)	MP L2 M
5.1.6 (a)	Before noon/*Voormiddag* ✓✓A Accept: Time in the morning	2A correct answer (2)	M L2 E
5.1.6 (b)	Driving time/*Rytyd* = 8 hrs and 19 min ✓MA 09:00 + 8 hrs and 19 min = 17:19 ✓CA Breaks/*Stoppe* = 65 min + 45 min + 49 min	1MA adding duration to correct beginning time 1CA correct final time	M L3 M

	= 159 min ✓CA $\frac{159}{60}$ = 2,65 = 2 hrs/*uur* and/*en* 39 min ✓C Arrival time/*Aankomstyd*: = 17:19 + 2 hrs and 39 min✓MCA = 19:58 ✓CA **OR/*OF*** Total time/*totale tyd* ✓M = 8 hrs 19 min + 65 min + 45 min ÷ 49 min = 8 hrs 178 min ✓CA 178 min = 2 hrs 58 min ✓C ∴ Total time = 10 hrs 58 min ✓CA 09:00 + 10 hrs 58 min ✓MCA = 19:58 ✓CA **OR/*OF*** ✓M ✓M 9:00 + 8:19 + 0:65 + 0:45 + 0:49 = 17:178 min ✓CA ✓C 178 min = 2 hrs 58 min 17:00 + 2 hrs 58 min ✓MCA = 19:58 ✓CA	1CA total time for breaks 1C conversion 1MCA adding 1CA arrival time 1M adding time 1CA answer 1C conversion 1CA total time 1MCA adding to correct beginning time 1CA arrival time 1M adding to correct beginning time 1M adding time 1CA answer 1C conversion 1MCA adding 1CA total time (6)	

Q/*V*	Solution/*Oplossing*	Explanation *Verduideliking*	T & L
5.2	Inland cost/*binnelandse koste* = 80 litres × R22,86 = R1 828,80 ✓CA Coastal cost/*Kuskoste* = 80 litres × R22,07 = R1 765,60 % diff/*verskil* = $\frac{\text{R1 828,80} - \text{R1 765,60}}{\text{R1 828,80}} \times 100\%$ (✓MCA ✓MCA) = 3,46 % ✓CA NOT VALID/*NIE GELDIG NIE* ✓O **OR/*OF*** % diff/*verskil* = $\frac{\text{R22,86} - \text{R22,07}}{\text{R22,86}} \times 100\%$ ✓MA (✓A ✓A) = 3,46 % ✓CA NOT VALID/*NIE GELDIG NIE* ✓O **OR/*OF*** ✓A $\frac{1\,765,60}{1828,80} \times 100\%$ ✓MA ✓A = 96,54 100% - 96,54 = 3,46%✓CA NOT VALID/*NIE GELDIG NIE* ✓O **OR/*OF*** ✓A	1CA calculating amounts (R1 828,80 and R1 765,60) 1MCA numerator 1MCA denominator 1CA correct % 1O conclusion 1A numerator 1A denominator 1MA multiplied by 100% 1CA correct % 1O conclusion 1A numerator 1A denominator 1MA multiplied by 100% 1CA correct % 1O conclusion 1A numerator 1A denominator 1MA multiply by 100%	F L4 M

	$\frac{22,07}{22,86} \times 100\%$ ✓MA ✓A = 96,54% 100% - 96,54 = 3,46%✓CA NOT VALID/*NIE GELDIG NIE* ✓O	1CA correct % 1O conclusion (5)	
5.3.1	Driving time/*Reistyd* = 2hr 20 min – 15 min = 2 hr 05 min ✓A 2 hr + $\frac{05}{60}$ = 2,083333.....✓C 121 km = speed × 2,083333…..✓SF Speed/*Spoed* = $\frac{121\text{ km}}{2,0833333...}$ ✓MA = 58,08 km/h ✓CA	1A driving time 1C conversion 1SF substitution 1MA changing the subject 1CA average speed **NPR** (5)	M L3 M

Q/*V*	Solution/*Oplossing*	Explanation *Verduideliking*	T&L
5.3.2	R23 887,50 = 97,5% ? = 100% Original amount/*Oorspronklike bedrag* ✓MA = R23 887,50 × $\frac{100}{97,5}$ ✓A ✓A = R24 500 ✓CA **OR/*OF*** 100% – 2,5% = 97,5% = 0,975 ✓MA Original amount/*Oorspronklike bedrag* = $\frac{\text{R23 887,50}}{0,975}$ ✓A ✓A = R24 500,00 ✓CA **OR/*OF*** 1 – 0,025 = 0,975 ✓MA Original amount/*Oorspronklike bedrag* = $\frac{\text{R23 887,50}}{0,975}$ ✓A ✓A = R24 500,00 ✓CA	 1MA multiply with correct amount 1A numerator 1A denominator 1CA amount 1MA correct % 1A numerator 1A denominator 1CA amount 1MA difference 1A numerator 1A denominator 1CA amount (4)	F L2 D
		[33]	

TOTAL/*TOTAAL*: 150

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