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LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 12

MATHEMATICAL LITERACY P2

PREPARATORY EXAM

MARKING GUIDELINES/NASIENRIGLYNE

SEPTEMBER 2023

MARKS/*PUNTE*: 150

Symbol/*Kode*	Explanation/*Verduideliking*
M	Method/*Metode*
MA	Method with accuracy/*Metode met akkuraatheid*
MCA	Method with consistent accuracy/*Metode met volgehoue akkuraatheid*
CA	Consistent accuracy/*Volgehoue akkuraatheid*
A	Accuracy/*Akkuraatheid*
C	Conversion/omskakel/*Herleiding*
S	Simplify/vereenvoudig/*Vereenvoudiging*
RT	Reading from a table/graph/document/diagram/*Lees vanaf tabel/grafiek/dokument/diagram*
SF	Correct substitution/vervanging in a formula/*Korrekte vervanging in 'n formule*
O	Opinion/opinie/Explanation/*Opinie/Verduideliking*
P	Penalty, e.g. for no units, incorrect rounding off, etc./*Penalisasie, bv. vir geen eenhede, verkeerde afronding, ens.*
NPR	No penalty for correct rounding/*Geen penalisasie vir korrekte afronding nie*
NPU	No penalty for omitting unit, but wrong unit is penalised/*Geen penalisasie indien die eenheid uitgelos is, maar wel indien 'n verkeerde eenheid gebruik word.*
AO	Answer/antwoord only/*Slegs antwoord*

These marking guidelines consist of 12 pages.
Hierdie nasienriglyne bestaan uit 12 bladsye.

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NOTE:

- If a candidate answer/antwoords 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.
- Rounding is an independent mark.
- General principle of marking, if the candidate makes one mistake he loses one mark.
- A conclusion mark can only be given if relevant calculations precedes it.

LET WEL:

- *As 'n kandidaat 'n vraag TWEE KEER beantwoord, sien slegs die EERSTE poging na.*
- *As 'n kandidaat 'n antwoord van 'n vraag doodtrek (kanselleer) en nie oordoen nie, sien die doodgetrekte (gekanselleerde) poging na.*
- *Volgehoue akkuraatheid (CA) word in ALLE aspekte van die nasienriglyne toegepas; dit hou egter 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.*
- *Afronding tel as 'n afsonderlike punt.*
- *Die algemene beginsel van merk as 'n leerder een fout maak verloor hy een punt.*
- *'n Gevolgtrekkingspunt kan slegs gegee word indien relevante berekeninge dit voorgaan.*

QUESTION/*VRAAG* 1 [29 MARKS/*PUNTE*] ANSWER/ANTWOORD ONLY FULL MARKS			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
1.1.1	Percentage of flour $=\frac{15}{100} \times 2000g$ ✓MA =300g ✓A	1MA Multiplying/vermenigvuldigtydformaat 2000g by 15% 1A simplify/vereenvoudig (2)	M L1
1.1.2	Ratio / *Verhouding* ✓RT $=\frac{1}{2}:2$ **OR / *OF*** 0,5 :2 ✓MA = 1:4 ✓A	1RT correct values/korrekte waardes 1MA correct order/korrekte orde 1A simplify/vereenvoudig (3)	M L1
1.1.3	Number of cakes / *Aantal koeke* $=\frac{1000ml}{250ml}$ ✓MA = 4 cakes ✓A	1MA divide/deel by 250ml 1A simplify/vereenvoudig (2)	M L1
1.1.4	Time in 24-hour format / *Tyd in 24 uur formaat* = 13:20 ✓✓A	tydformaat 2A correct time format (2)	M L1

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Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
1.1.5	Total Carbohydrates in mg / *Totale Koolhidrate in mg* = 51 g × 1 000 ✓MA = 51 000 mg ✓A	 1MA multiplying/vermenigvuldig by 1 000 1A simplify/vereenvoudig (2)	M L1
1.2.1.	Route map / Roete kaart ✓✓A	2A correct map/korrekte kaart (2)	MP L1
1.2.2.	R49 ✓✓RT	2RT reading from the map /lees vanaf kaart/lees vanaf kaart (2)	MP L1
1.2.3.	Total distance / Totale afstand = 70 km + 71,9 km ✓MA = 141,9 km ✓CA	 1MA adding distance/bymekaartel 1CA simplify/vereenvoudig (2)	MP L1
1.2.4	3 ✓✓A	2A correct number. (2)	MP L1
1.3.1	✓✓RT 5 Saterdae/Saturdays	2 RT Reading from the Calender Lees van kalender (2)	M L1
1.3.2	✓✓A Sondag/Sunday	2A correct day/korrekte dag (2)	M L1
1.3.3	31 days ✓✓A	2A correct number of days/aantal dae/ (2)	M L1
1.3.4	13/02/2020 ✓✓A	2A Correct Answer/antwoord (2)	M L1
1.3.5	2020 + 4 years ✓MA = 2024 ✓A	1MA adding four years/4 jaar bytel 1A simplification/vereenvoudig (2)	M L1
		[29]	

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QUESTION/*VRAAG* 2 [26 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T/L**
2.1.1	A2 or 2A ✓✓RT	2RT Reading from the map /lees vanaf kaart (2)	MP L1
2.1.2	✓✓RT Marsh Street and Lang Street ✓✓RT ✓A	2 RT Reading from the map /lees vanaf kaart (4)	MP L2
2.1.3	Draai links in Bruns straatdan links in Montagu straat by die kruising loop reguit tot byMarsh straat em draai ✓A dan regsreguit verby High straat aan linkerkant is die ingang van die polisiestasie Handy should enter Bruns street and turn left, then turn left again into Montague Street at the junction. Walk straight until Marsh Street and ✓A turn right into Marsh street. Walk straight and pass High Street. On the left side is the entrance of the police station ✓A	1A turn/draai/left/links 1A turn/draai left into /linksMontague 1A turn/draai right/regs into Marsh 1A On the left is the entrance ingang links (4)	MP L2
2.1.4	Speed/spoed = $\frac{Distance/afstand}{TimeTyd}$ $= \frac{2{,}4\ Km}{0{,}16\ hours}$ ✓SF $= 15\ km/h$ ✓CA	1SF Correct substitution/vervanging vervanging 1CA simplify/vereenvoudig (2)	MP L2

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Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
2.2.1	✓✓A Staaf lyn Bar/Line scale/skaal	2A correct scale/skaal (2)	MP L1
2.2.2	Scale/skaal $=\frac{100 \times 1000000}{32mm}$ ✓M = 3 125 000 ✓CA 1: 3 125 000 ✓CA	 1M multiplying/vermenigvuldig and divide/deel correct values 1CA simplify/vereenvoudig 1CA scale/skaal (3)	MP L3
2.2.3	North East ✓✓A	2A general direction/algemene rigting (2)	MP L2
2.2.4	Gemete kaartafstand Measured Map Distance = 15mm ✓A Ware afstand Actual Distance in km = $\frac{15mm \times 100km}{32mm}$ ✓MA ✓M = 46,875 km ✓CA = 47 km OR Gemete kaartafstand ✓A Measured Map Distance =15mm Werklike Afstand ✓MA Actual Distance = $\frac{15mm \times 3\ 125\ 000}{1000\ 000}$ ✓M = 46,875Km ✓CA = 47 km ✓R	1A Measured map distance kaart afstand (accept 13mm-17mm) 1MA Multiplying/vermenigvuldig by 100km 1M divide/deel by 32mm (Accept 30mm – 34mm) 1CA simplify/vereenvoudig 1 R Rounding afrond (5) 1A Measured map distance kaart afstand 1MA Multiplying/vermenigvuldig by scale/skaal 1M divide/deel by 1000000 1CA simplify/vereenvoudig 1 R Rounding afrond	MP L2
2.2.5	Pad is nie reguitlyn afstand nie The road is not a straight-line distance as measured on the map.✓✓O	2O Opinion/opinie (2)	MP L4
		[26]	

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QUESTION 3 [34 MARKS]

Q/ V	Solution/*Oplossing*	Explanation/ *Verduideliking*	T/L
3.1.1	Radius $= \frac{diameter/deursnee}{2}$ $= \frac{1750mm}{2}$ ✓M $= 875mm$ ✓A	1MA Calculating/bereken/afrond radius in mm 1A Answer/antwoord (2)	M L1
3.1.2	Volume $= \pi r^2 h$ ✓C $= 3{,}142 \times (0{,}875m)^2 \times 2{,}6m$ ✓SF $= 6{,}25454375m^3$ ✓S $6.25454375m^3 \times 4$ ✓MCA $= 25{,}0181m^3$ $\approx 25m^3$ ✓R	**CA from Question 3.1.1** 1C conversion/omskakel 1SF Correct Substitution/vervanging 1S Simplify/vereenvoudig 1MCA Multiplying/vermenigvuldig by 4 1R Rounding (5)	M L2
3.1.3	Oppv Surface Area $= \pi rs + 2\pi rh$ ✓SF $= 3{,}142 \times 0{,}875m \times 1{,}2m + 2 \times 3{,}142 \times 0{,}875m \times 2{,}6m$ $=17{,}5952m^2$ ✓CA $17{,}5952m^2 \times 4$ ✓MCA $= 70{,}3808m^2$ ✓A Aantal liters verf No. of litres of paint $= \frac{70{,}3808m^2}{6m^2}$ ✓MCA $= 11{,}73\ell \times 2$ ✓M $= 23{,}46\ \ell$ $= 24\ell$ ✓A	**CA from Question 3.1.1** 1SF Substitung correct values/korrekte waardes 1CA simplify/vereenvoudig 1MCA Multiplying/vermenigvuldig by 4 1A Answer/antwoord 1MCA Divide/deel correct values/korrekte waardes 1MA multiplying/vermenigvuldig by 2	M L3

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		1A Rounded Answer/antwoord afrond (7)	
3.1.4	Aantal kanne verf Number of tins of paint required $= \frac{24\ell}{5}$ ✓MA $= 4{,}8\ tins$ ✓CA $\approx 5 tins$ ✓R	**CA from Question 3.1.3** 1MA Divide/deel by 5 1CA simplify/vereenvoudig 1R Rounding/afromd (3)	M L2
3.1.5 .	To prevent them from rust✓✓O Roes te voorkom	2O opinion/opinie (2)	M L4

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
3.2.1	Length/lengte of concrete slab = (0,3m × 5) + (1,75m × 4) ✓A = 8,5m Width/breedte of the concrete slab = (0,3m × 2)+ 1,75m = 2,35m $9{,}9m^2 = 8{,}5m \times 2{,}35m \times h$ ✓SF $h = \frac{9{,}9m^2}{8{,}5m \times 2{,}35m}$ ✓S $= 0{,}495619524m$ h= 0,5m ✓A	1A Length of concrete slab 1SF Substituting correct values/korrekte waardes 1S Simplify/vereenvoudig 1A Rounded answer/antwoord (4)	M L3
3.2.2	Length/lengte of the fence $= (1{,}75m \times 4) + (0{,}3m \times 5) + 3m$ ✓M $= 11{,}5m$ ✓CA Width/breedte of the fence $= 1{,}75m + (0{,}3m \times 2) + 3m$ $= 5.35\ m$ ✓A ✓SF Total length/lengte required $= 2 \times (\ 11{,}5m + 5{,}35m)$ $= 33{,}7m$ ✓CA	1M Adding correct values/korrekte waardes 1CA Simplify/vereenvoudig 1CA Simplify/vereenvoudig width 1SF Substituting correct values/korrekte waardes 1CA Simplify/vereenvoudig (5)	M L3
3.2.3	$80kg\ raw\ maize \times 4 = 320kg$ ✓A $80kg\ processed\ maize\ meal \times 3 = 240kg$ $15\ 000\ tons \times 1000 = 15\ 000\ 000\ kg$ ✓C Aantal kg meel Number of kg of processed maize meal	1A Answer/antwoord, Total Kg of raw maize 1C conversion/omskakel	M L3

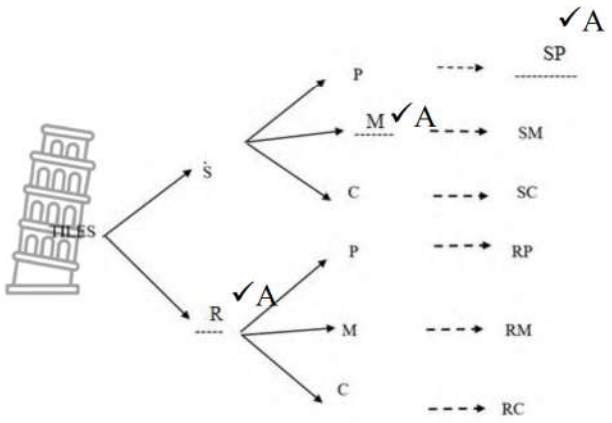
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	$= \frac{15\ 000\ 000kg \times 240kg}{320\ kg}$ ✓M $= 11\ 250\ 000kg$ ✓CA Aantal sake vir 4 silos ✓MCA Total number of bags for 4 silos= $\frac{11\ 250\ 000 \times 4}{80\ kg}$ = 562 500 bags ✓CA OR $80kg\ raw \times 4 = 320kg$ ✓A $320kg \div 1000 = 0{,}32\ ton$ ✓C Aantal meelsakke Number of bags of processed maize meal bags = $15\ 000\ tons \times 0{,}24 \div 0{,}32\ tons$ ✓M $= 11250\ tons$ ✓CA 11 250 ÷ 0,08 = 140625 bags ✓MCA Aantal sake vir 4 silos Total number of bags for 4 silos= 140 625 bags × 4 = 562 500 bags ✓CA	1M Multiplying/vermenigvuldig and divide/deel correct values/korrekte waardes 1CA Simplify/vereenvoudig kg for 1 silo 1MCA Multiplying/vermenigvuldig by 4 and divide/deel by 80kg 1CA Simplify/vereenvoudig 1A Answer/antwoord, Total Kg of raw maize 1C conversion/omskakel 1M Multiplying/vermenigvuldig and divide/deel correct values/korrekte waardes (6)

QUESTION4 [30 MARKS]

Q/V	Solution/ *Oplossing*	Explanation	T/L
4.1.1	A floor plan is a top view of the design and dimensions of the inside of a building.Boaansig✓✓A OR A Floor plan is the Aerial view of the arrangements of the inside of a building /hoogte perspektief	2A explanation /verduidelik (2)	MP L1
4.1.2	9 doors/deure✓✓RT	2RT Reading from the plan Lees van plan (2)	MP L2
4.1.3	✓SF ✓M Area of the room/kamer = (9,5 ×0.305) × (12,5 × 0,305) ✓S $= 2{,}8975 \times 3{,}8125$ $= 11{,}05m^2$ ✓CA	1M Multiplying/vermenigvuldig by 0,305 1SF Substituting values Vervang waardes 1S Simplify/vereenvoudig 1CA Simplify/vereenvoudig (4)	M L3

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4.2.1		1A R 1A M 1A SP (3)	P L2
4.2.2	6 Outcomes✓✓A	2A number of outcomes Aantal uitkomste (2)	P L2
4.2.3	P(Ceramic or Marble) $= \frac{2}{6} + \frac{2}{6} = \frac{4}{6} = \frac{2}{3}$ ✓A ✓A	1A numerator/teller 1A denominator/noemer 1A simplify/vereenvoudig (3)	P L2



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Q/V	**Solution/*Oplossing***	**Explanation/*Verduideliking***	T/L
4.3.1	$Length/lengte\ of\ the\ living\ room = 17,5 \times 0,305$ $= 5,34m$ ✓A $Width/wydte\ of\ living\ the\ room = 11 \times 0,305$ $= 3,36m$ ✓CA Area/Oppv Of Living room = $5,34m \times 3,36m$ ✓M $= 17,9424m^2$ ✓CA Oppv van reghoekige teel Area of a rectangular tile = $0,9\ m \times 0,6m$ $= 0,54m^2$ ✓CA Aantal teels benodig Total number of tiles required = $\frac{17,9424m^2}{0,54m^2}$ ✓M $= 33,23tile \approx 34\ tiles$ ✓CA Nie geldig Her statement is not valid ✓O	1A Answer/antwoord length 1A Answer/antwoord width 1M Calculating/bereken area 1CA Simplify/vereenvoudig 1CA Simplify/vereenvoudig 1M Diving/duik Area 1A Rounded Answer/antwoord afrond 1O Opinion/opinie (8)	M L4
4.3.2	Time taken to tile the living room= $\frac{45min \times 36\ tiles}{15\ tiles}$ ✓M Tyd om sitkamer te teel $= 108\ min$ ✓S $= 1h\ 48\ min$ ✓A Eindtyd Finishing Time = $08h15 + 1h48 + 25min$ ✓M $= 10h\ 28$ ✓CA Nie geldig ✓O Her statement is not valid	1M Multiplying/vermenigvuldig and divide/deel 1S Simplify/vereenvoudig 1A Answer/antwoord 1M Adding time/bymekaar tel 1CA Simplify/vereenvoudig 1O Opinion/opinie (6)	M L4
		[30]	

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QUESTION[31 MARKS]

Q/V	Solution/ *Oplossing*	Explanation/ *Verduideliking*	T/L
5.1.1	Total Number of parts aantal parte = 1+1+1+1+1+1+1+5+1+2+4+8+2+4+1+4 ✓M = 38 ✓CA	1M Method of adding correct values/korrekte waardes 1CA Simplify/vereenvoudig (2)	MP L1
5.1.2	Steps 1 E ✓A 2 D ✓A 3 F ✓A 4 B 5 A ✓A 6 C ✓A	1A Answer/antwoord 1A Answer/antwoord 1A Answer/antwoord 1A Answer/antwoord 1A Answer/antwoord (5)	MP L1
5.1.3	✓✓A A AND F / 3 AND 4 ✓✓A	2A Answer/antwoord (2)	MP L2
5.1.4	Maklik vervoer ✓✓O For easier transportation. **OR** Maklik dra of hou ✓✓O Easy carrying or holding' **OR** Cheaper than readily made ✓✓O Goedkoper as klaargemaaktes **OR** Any valid reason or opinion/geldige opinie	2O Opinion/opinie (2)	MP L4
5.2.1	6 ✓✓A	2A Answer/antwoord (2)	MP L1
5.2.2	The speaker is the presiding officer of the parliament, hence he/she must be able to see all members, ✓✓A Voorsitter moet so geplaas wees dat hul almal kan xien	2O opinion/opinie (2)	MP L4
5.2.3	Om parlementslede van mekaar te beskerm ✓✓O To protect members of parliament against each other **OR Om gladde verloop van parlement te verseker** ✓✓O To maintain the smooth running of the parliament **OR** Any valid reason or opinion/opinie	2O Opinion/opinie (2)	MP L4

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5.3.1 (a)	$BMI = \frac{75\ kg}{(1{,}8m)^2}$ ✓SF ✓A $= 23{,}14814815$ ✓A $= 23$ ✓R	1SF Correct Substitution/vervanging 1A Height Squared/vierkante hoogte 1A Answer/antwoord 1R Rounding/afrond (4)	M L2
Q/V	**Solution/*Oplossing***	**Explanation/*Verduideliking***	T/L
5.3.1 (b)	Normal weight/gewig✓✓A	**CA from Question 5.3.1(a)** 2A Answer/antwoord (2)	M L2
5.3.2	Overweight/oorgewig✓✓A	2A Answer/antwoord (2)	M L2
5.3.3	$BMI = \frac{weight\ in\ kg}{(height\ in\ m)^2}$ $26 = \frac{weight}{(1{,}6m)^2}$ ✓SF $Weight; gewig = 26 \times (1{,}6m)^2$ $= 66{,}56kg$ ✓A $75kg - 66{,}56kg = 8{,}44kg$ ✓A	1SF Correct Substitution/vervanging 1S Simplify/vereenvoudig 1A Answer/antwoord 1 CA Difference/verskil (4)	M L3
5.3.4	• Exercise a lot genoeg oefen ✓✓O • Reduce the amount of food she takes Verminder kos inname✓✓O • Reduce eating too much fat food Eet minder vet✓✓O • Join weight/gewigless programs/sluit by oefenprogram aan ✓✓O • Any reasonable answer/antwoord/enige aanvaarbare antwoord	2O Opinion/opinie (2)	M L4
		[31]	
		TOTAL/*TOTAAL*: 150	