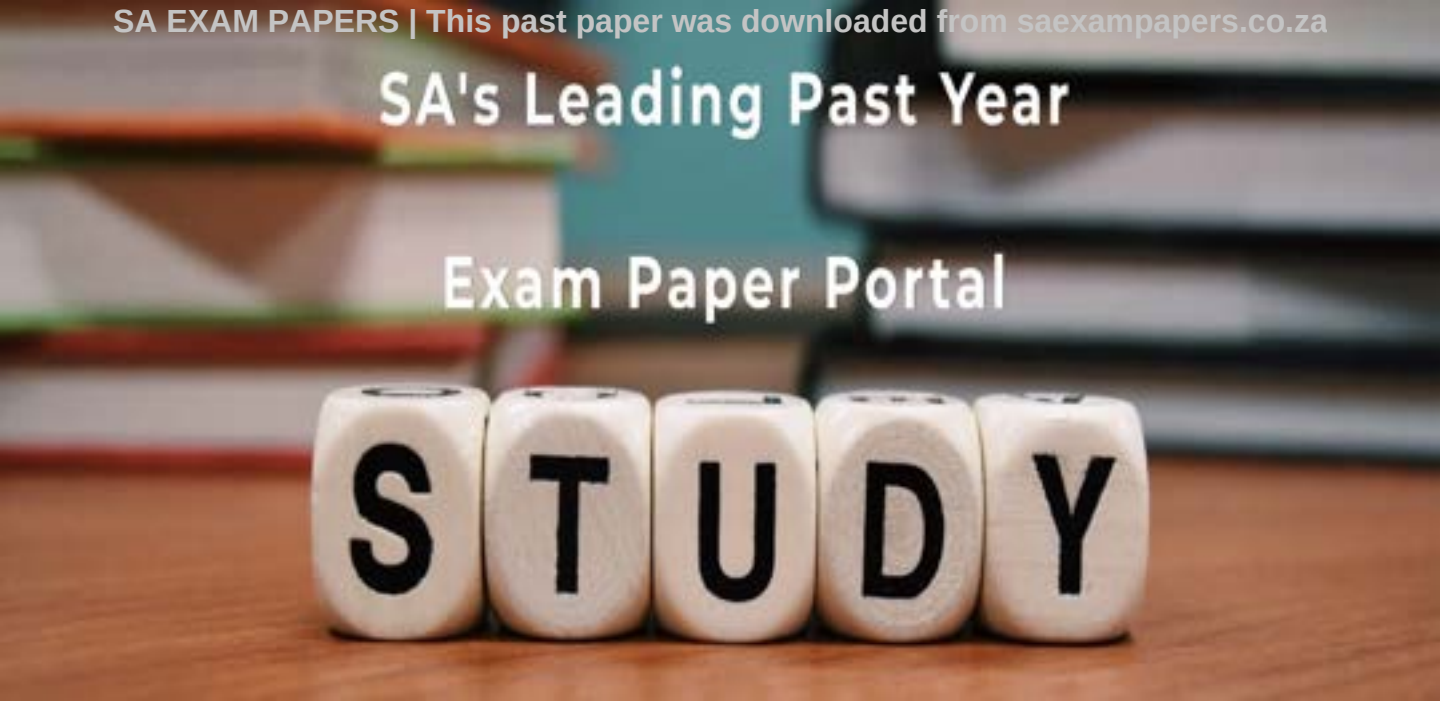

education

Department:
Education
NORTHERN CAPE

GRADE/*GRAAD* 12

MATHEMATICAL LITERACY P2/

WISKUNDIGE GELETTERDHEID V2

MAY / JUNE 2024

MARKING GUIDELINES/*NASIENRIGLYNE*

MARKS/*PUNTE*: 100

Symbol/*Kode*	Explanation/*Verduideliking*
MA	Method with accuracy/*Metode met akkuraatheid*
CA	Consistent accuracy/*Volgehoueakkuraatheid*
A	Accuracy/*Akkuraatheid*
C	Conversion/*Herleiding*
S	Simplification/*Vereenvoudiging*
RT	Reading from a table/graph/document/diagram/*Lees vanaftabel/grafiek/document/diagram*
SF	Correct substitution in a formula/*Korrektevervanging in 'n formule*
O	Opinion/Explanation/*Opinie/Verduideliking*
P	Penalty, e.g. for no units, incorrect rounding off, etc./*Penalisasie, bv. virgeeneenhede, verkeerdeafronding, ens.*
R	Rounding off/*Afronding*
NPR	No penalty for rounding/*Geen penalisasie vir afronding nie*
AO	Answer only/*Slegsantwoord*
MCA	Method with constant accuracy/*Metode met volgehoueakkuraatheid*
J	Justification

These marking guidelines consist of 11 pages including 2 pages of notes.
Hierdie nasienriglyne bestaan uit 11 bladsye insluitende 2 bladsye met notas.

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 or break-down.
- 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 one mark is deducted.
- A conclusion mark can only be given if relevant calculations precedes it (at least 1 mark before conclusion).
- No penalty for rounding (NPR) if the first decimal is correct, except questions involving money.

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 of 'break-down'.*
- *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, word een punt afgetrek.*
- *'n Gevolgtrekkingspunt kan slegs gegee word indien relevante berekeninge dit voorgaan (ten minste een punt voor die gevolgtrekking).*
- *Geen penalisering vir ronding (NPR) as die eerste desimaal korrek is nie, behalwe as vrae geld insluit.*

QUESTION/*VRAAG* 1 [20 MARKS/*PUNTE*]		**ANSWER ONLY FULL MARKS**	
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
* 1.1.1	C ✓✓A	2A correct explanation (2)	M L1
* 1.1.2	D ✓✓A	2A correct explanation (2)	M L1
* 1.1.3	B ✓✓A	2A correct explanation (2)	M L1
1.2.1	Radius / *Radius* = 75 mm ÷ 2 ✓MA = 37,5 mm ✓A	1MA dividing by 2 1A simplification (2)	M L1
1.2.2	= 385g ÷ 1 000 ✓MA = 0,385 kg ✓A	1MA dividing by 1 000 1A simplification (2)	M L1

Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
1.3.1	Strip chart (map) / *Strookkaart* ✓✓A	2A correct type (2)	MP L1
1.3.2	N2 ✓✓A	2A correct national route (2)	MP L1
* 1.3.3	78 km ✓✓A	2A correct distance (2)	MP L1
1.3.4 (a)	✓A ✓A Paarl / Worcester / Robertson	1A correct town 1A correct town (2)	MP L1
* 1.3.4 (b)	Total distance / *Totale afstand* = 51 km + 46 km + 50 km + 21 km ✓MA = 168 km ✓A	 1MA adding correct values 1A simplification (2)	MP L1
		[20]	

QUESTION/*VRAAG 2* [24 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
2.1	3 people / *mense* ✓✓A	2A correct number (2)	MP L1
2.2	0 chairs / stoele ✓✓A	2A correct number (2)	MP L2
* 2.3	✓RT 4 : 20 ✓MA 1 : 5 ✓CA	1RT number of tables and chairs 1MA correct order 1CA simplification (3)	MP L1
2.4	4 power outlets / *krag punte* ✓✓A	2A correct number (2)	MP L2
2.5	100% ✓✓A	2A probability (2)	P L2
2.6	Table / *Tafel 2* ✓✓A	2A correct table (2)	MP L2
* 2.7 (a)	16 cm ✓✓A	2A measurement in cm Accept: 15 – 17 cm (2)	MP L1
* 2.7 (b)	16 cm : 11 m ✓MA 16 cm : 11 m × 100 16 : 1 100 ✓C 1 : 68,75 ✓CA ≈ 1 : 70 ✓R	**CA from question 2.7 (a)** 1MA concept of scale 1C conversion 1CA simplification 1R correct rounding (4)	MP L3

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.8	14 chairs / *stoele* Odd numbers / *Ongelykke getalle* = 1, 3, 5, 7,9, 11, 13 Probability / *Waarskynlikheid* $= \frac{7}{14}$ ✓A ✓A = 0,5 ✓CA	1A numerator 1A denominator 1CA simplification (3)	P L2
* 2.9	To keep conference material safe, such as laptops, projectors, extension cords / ✓✓O *Om konferensie materiaal soos skoot rekenaars, projectors en verlengingskoorde veilig the hou*.	2O reason (2)	MP L4
		[24]	

QUESTION/*VRAAG* 3 [25 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
3.1.1	Area of wall A / *Area van die muur A* = 4,3 m × 2,7 m ✓MA = 11,61 m^2 ✓CA Area of wall B / *Area van die muur B* = 7,4 m × 2,7 m = 19,98 m^2 ✓A Total surface area = 11,61 m^2 + 19,98 m^2 ✓MA = 31,59 m^2 ✓CA	 1MA multiplying correct values 1CA simplification 1A simplification 1MA adding correct surface area 1CA simplification **NPR** (5)	M L2
* 3.1.2	12 mm ÷ 10 = 1,2 cm ✓A 31,59 m^2 × $(100)^2$ ✓C = 315 900 cm^2 ✓CA Volume = 315 900 cm^2 × 1,2 cm ✓SF = 379 080 cm^3 ✓CA	**CA from Question 3.1.1** 1A thickness in cm 1C conversion m^2 to cm^2 1CA simplification 1SF substitution 1CA simplification (5)	M L3

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
3.2.1	= 3,785 ℓ × 1 000 ✓MA = 3 785 mℓ ✓A	1MA × 1 000 1A simplification (2)	M L1
* 3.2.2	Starting time / *Begin tyd* ✓MA = 11:30 – 1 hour/*uur* – 4 hours/*uur* ✓MA = 06:30 ✓CA	1MA subtracting 1 hour 1MA subtracting 4 hours 1CA simplification **AO** (3)	M L2
* 3.2.3	Total number of litres needed / *Aantal liter benodig* $= \frac{35\ m^2}{6\ m^2}$ ✓MA = 5,8333333333 ℓ ✓CA = 10 ℓ ✓R	1MA dividing by 6 m² 1CA simplification 1R correct rounding (3)	M L2
* 3.3.1	Length of Z / *Lengte van Z* = 7,4 m – 4 m – (2 × 0,5 m) ✓A = 7,4 m – 4 m – 1 m ✓MA = 2,4 m ✓CA	1A diameter 1MA subtracting values 1CA simplification (3)	M L2
* 3.3.2	Circumference / *Omtrek* = π × d = 3,142 × 1 m ✓SF = 3,142 m ✓CA = 3,142 m × 100 ✓MA = 314,2 cm ✓A	1SF correct substitution 1CA simplification 1MA multiplying by 100 1A simplification (4)	M L2
		[25]	

QUESTION/*VRAAG* 4 [31 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
4.1.1	Bar scale / Linear scale / Line scale / Graphic scale *Staafskaal / Liniêre skaal / Lynskaal / Grafiese skaal* ✓✓A	2A correct scale (2)	MP L1
4.1.2	Kwa Maritane ✓✓A	2A correct game lodge (2)	MP L1
4.1.3	South East / SE *Suid-Oos / SO* ✓✓A	2A general direction (2)	MP L2
* 4.1.4	Speed / *Spoed* ✓SF 521,6 km = speed × 5 hrs 12 min Speed = $\frac{521{,}6\ \text{km}}{5{,}2\ \text{hours}}$ ✓A ✓MA = 100 km/h ✓CA His statement is VALID / *Sy bewering is GELDIG* ✓O	1SF correct substitution (521,6 km) 1MA change subject of formula 1A correct time (5,2 hours) 1CA simplification 1O conclusion (5)	MP L4
4.1.5	Return trip / *Re-toer* = 521,6 km × 2 = 1 043,2 km ✓A Fuel used / *Brandstof gebruik* = $\frac{1\ 043{,}2\,\text{km}}{100\,\text{km}} \times 7{,}3\ \ell$ ✓MA = 76,1536 ℓ ✓A Fuel cost / *Brandstof koste* = 76,1536 ℓ × R22,92 ✓MA = R1 745,44 ✓CA Cost per person / *Koste per persoon* = R1 745,44 ÷ 4 = R436,36 ✓CA	1A total distance 1MA fuel consumption rate 1A simplification 1MA muiltiplying with R22,92 1CA fuel cost 1CA cost per person (6)	M L3

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
4.2.1	Volume of cylinder / *Volume van 'n silinder* $= 3{,}142 \times (4\text{ m})^2 \times 1\text{ m}$ ✓SF $= 50{,}272\text{ m}^3$ ✓CA Volume of rectangular prism / *Volume van 'n reghoeking prisma* $= 8{,}2\text{ m} \times 4{,}3\text{ m} \times 1{,}75\text{ m}$ $= 61{,}705\text{ m}^3$ ✓A Difference / *Verskil* $= 61{,}705\text{ m}^3 - 50{,}272\text{ m}^3$ ✓MCA $= 11{,}433\text{ m}^3$ ✓CA $= 11{,}433\text{ m}^3 \times 1\,000$ $= 11\,433\ \ell$ ✓CA	1SF correct substitution 1CA simplification 1A simplification 1MCA subtracting values 1CA simplification 1CA simplification (6)	M L3
4.2.2	S.A. of cylinder / *B.O. van silinder* $= 3{,}142 \times 4\text{ m} \times (4\text{ m} + 2 \times 1\text{ m})$ ✓SF $= 75{,}408\text{ m}^2$ ✓CA Area of one tile / *Area van een teel* $= 0{,}2\text{ m} \times 0{,}2\text{ m}$ $= 0{,}04\text{ m}^2$ ✓CA Number of tiles needed / *Aantal teels benodig* $= \frac{75{,}408\text{ m}^2}{0{,}04\text{ m}^2}$ ✓MCA $= 1\,885, 2$ $\approx 1\,886$ ✓CA Number of boxes / *Aantal bokse* $= 1\,886 \div 16$ ✓MCA $= 117{,}875$ ≈ 118 ✓CA His statement is VALID / *Sy bewering is GELDIG* ✓O	1SF substituting 1CA simplification 1CA area of one tile 1MCA finding number of tiles 1CA number of tiles 1MCA dividing by 16 1CA number of boxes 1O conclusion (8)	M L4
		[31]	
		TOTAL/*TOTAAL*: 100	

<table>
<tr><td colspan="3">NOTES:</td></tr>
<tr><td colspan="3">***CA-Mark can only be awarded if one of the two values is correct.</td></tr>
<tr><td colspan="3">QUESTION 1</td></tr>
<tr><td>1.1</td><td>Learners wrote explanation (sentence) = full marks</td><td></td></tr>
<tr><td>1.3.3</td><td>AFRIKAANS ONLY / SLEGS AFRIKAANS
$= \frac{\text{Leerder se punt}}{18} \times 20$

<table><tr><th>Leerder se punt uit 18</th><th>Leerder se punt uit 20</th></tr><tr><td>10</td><td>11</td></tr><tr><td>11</td><td>12</td></tr><tr><td>12</td><td>13</td></tr><tr><td>13</td><td>14</td></tr><tr><td>14</td><td>16</td></tr><tr><td>15</td><td>17</td></tr><tr><td>16</td><td>18</td></tr><tr><td>17</td><td>19</td></tr><tr><td>18</td><td>20</td></tr></table>
Die vraestel Totaal bly 100, ons pas slegs Vraag 1 aan.</td><td></td></tr>
<tr><td>1.3.4 b</td><td>Adding at least 3 correct values = ✓MA</td><td>1/2 marks</td></tr>
<tr><td colspan="3">QUESTION 2</td></tr>
<tr><td>2.3</td><td>✓MA
3 : 20 ✓CA OR 1 : 6,67</td><td>2/3 marks</td></tr>
<tr><td>2.7 a</td><td>Measure according to layout plan learners received
(range – 1 up and 1 down)</td><td></td></tr>
<tr><td>2.7 b</td><td>Calculate scale according to measure distance in 2.7.a</td><td></td></tr>
<tr><td>2.9</td><td>Storage / a place to store items used in the conference room.
Make the room look neat – everything is packed away.
For filing purposes.</td><td>2/2 marks</td></tr>
<tr><td colspan="3">QUESTION 3</td></tr>
<tr><td>3.1.2</td><td>Answer in m³ = 0,37908 m³</td><td>3/5 marks</td></tr>
<tr><td>3.2.2</td><td>Starting time / Begin tyd
✓MA
= 11:30 – 1 hour/uur – 1 hour/uur – 4 hours/uur ✓MA
= 05:30 ✓CA</td><td>3/3 marks</td></tr>
<tr><td>3.2.3</td><td>Apply 2 coats = 15 ℓ</td><td>3/3 marks</td></tr>
<tr><td>3.3.1</td><td>Subtract radius = 2,9 m</td><td>2/3 marks</td></tr>
<tr><td>3.3.2</td><td>Substitute radius = 157,1 cm</td><td>3/4 marks</td></tr>
</table>

QUESTION 4		
4.1.4	Distance = speed × time = 120 × 5,2 = 624 km 624 km > 521,6 km His statement is VALID.	5/5 marks
	Accept: 100,3076923 km/h	