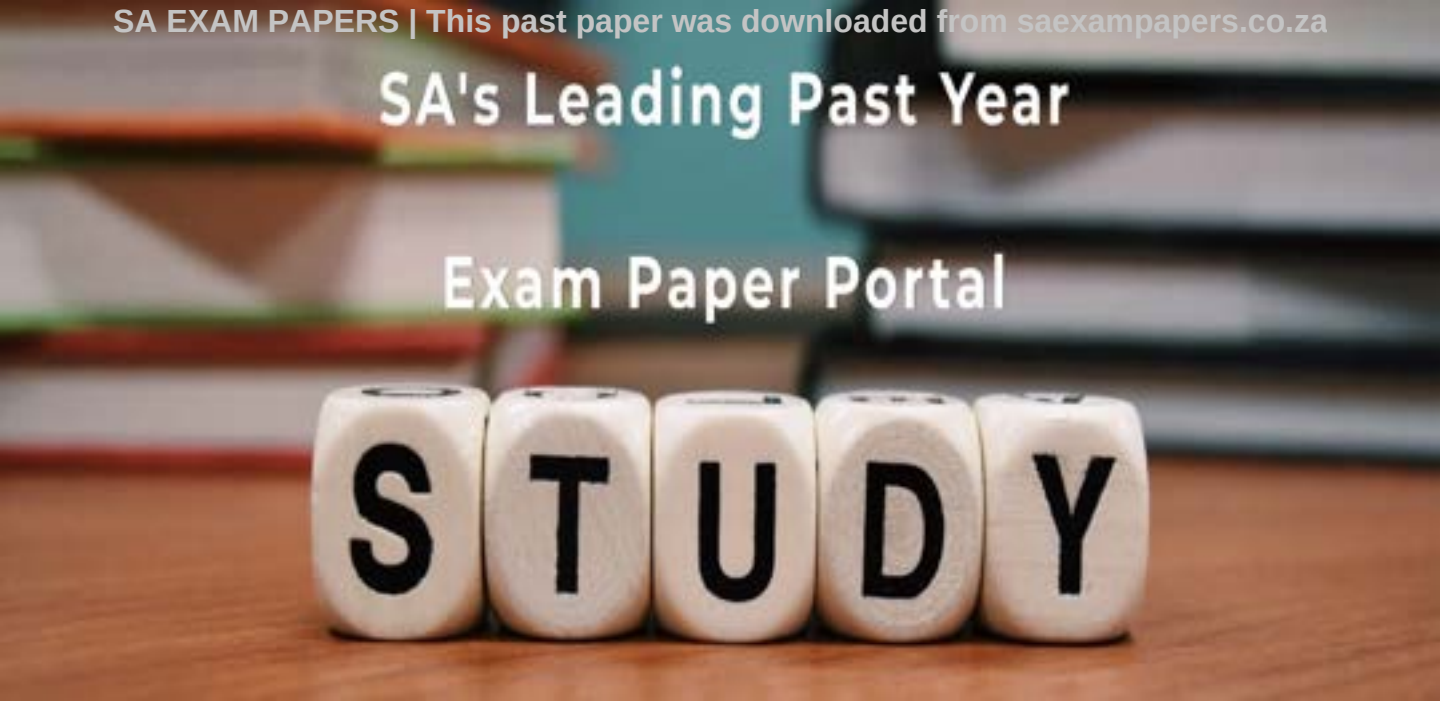

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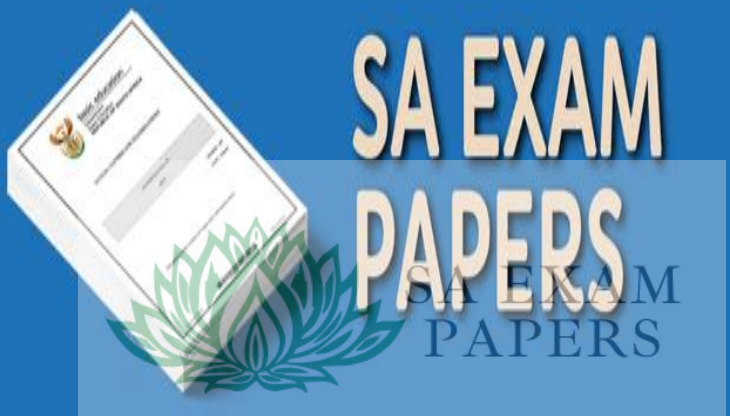

DEPARTMENT OF EDUCATION
DEPARTEMENT VAN ONDERWYS
LEFAPHA LA THUTO
ISEBE LEZEMFUNDO

PROVINCIAL PREPARATORY EXAMINATION/
PROVINSIALE VOORBEREIDENDE EKSAMEN

GRADE/*GRAAD* 12

MATHEMATICAL LITERACY

PAPER 2

SEPTEMBER 2024

MEMO

MARKS/*PUNTE*: 150

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/document/diagram/*Lees vanaf tabel/grafiek/document/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 rounding/*Geen penalisasie vir afronding nie*
NPU	No penalty for omitting correct unit/ *Geen penalisasie vir die uitlos van die korrekte eenheid nie*
AO	Answer only/*Slegs antwoord*
MCA	Method with constant accuracy/*Metode met volgehoue akkuraatheid*
RCA	Rounding consistent with accuracy/ *Afronding met volgehoue akkuraatheid*

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

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 incorrect 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.
- A conclusion mark can only be given if relevant calculations precede 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, 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 of afbreuk "break down" nie.*
- *Wanneer 'n kandidaat aflesings vanaf 'n grafiek, tabel, uitlegplan en kaart geneem en ekstra antwoorde gee, penaliseer vir elke ekstra verkeerde item.*
- *'n Algemene nasienbeginsel is dat indien 'n kandidaat een fout maak en daarna voortgaan met korrekte wiskunde, dat die kandidaat slegs een punt verloor.*
- *'n Gevolgtrekkingspunt kan slegs gegee word indien relevante berekeninge dit voorgaan(ten minste een punt voor die gevolgtrekking)*
- *Afronding tel as 'n onafhanklike punt.*
- *Geen penalisering vir ronding(NPR) as die eerste desimaal korrek is nie, behalwe as vrae geld insluit*

QUESTION/*VRAAG* 1 [27 MARKS/*PUNTE*] Answer Only AO- full marks			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
1.1.1 *	B ✓✓A	2 A correct selection/letter (2)	M&P L1
1.1.2 *	F ✓✓A	2A correct selection/letter (2)	M L1
1.1.3 *	D ✓✓A	2A correct selection/letter (2)	M L1
1.2.1 *	750 mm ✓✓RT	2RT correct length **NPU** (2)	M L1
1.2.2 *	Thickness = 18 ÷ 10 ✓C *Dikte* = 1,8 cm ✓A	1C conversion 1A answer in cm (2)	M L1

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
1.2.3 *	✓RT Ratio/*Verhouding* = 400 : 750 ✓MA = 8: 15 ✓A	1RT values 1MA correct order 1A ratio simplified form (3)	M L1
1.2.4	Rails/*Reelings* : 8 ✓✓RT	2RT correct number of rails Accept 7 (2)	M L1
1.2.5	Probabilty = 0 ✓✓A	2A answer Also accept 0% (2)	P L1
1.2.6	Space/*Spasie* = 270- 240 ✓M = 30 ÷ 3 ✓M = 10 ✓CA	1M subtracting 1M dividing by 3 1CA space (3)	M L1
1.3.1	Distance/*Afstand* : 779 km ✓✓RT	2RT reading correct distance **NPU** (2)	M&P L1
1.3.2	Routes/*Roete* : N2 and N12 ✓RT ✓✓RT	2RT first correct route 1RT second correct route (3)	M&P L1
1.3.3	Distance/*Afstand* = 734 – 215 ✓MA = 519 km ✓A **OR/OF** = 564 – 45 ✓MA = 519 km ✓A	1MA subtracting correct values 1A correct distance **NPU** (2)	M&P L1
			[27]

QUESTION/*VRAAG* 2 [27 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
2.1.1	Amount of people/*Getal mense* = 20 ✓✓RT	2RT reading from the plan (2)	M&P L1
2.1.2	A scale drawing of a room viewed from ✓✓A above/Top view of a building/ Top view of a building without the roof/*'n Skaaltekening van 'n vertrek van bo gesien./Boaansig van die gebou//Boaansig van die gebou sonder die dak*	1A drawing 1A from above (2)	M&P L1
2.1.3	Southwest/Suidwes ✓✓RT	2RT correct direction (2)	M&P L2
2.1.4	No doors/*Geen deure* ✓✓RT	2RT reading info from the plan also accept 0 (2)	M&P L2
2.1.5 *	Scale = 1:70 = 1 : 70 = 145 : x ✓A = 70 × 145 ✓MA = 10 150 mm ÷1 000 ✓CA ✓C = 10.15 m = 10 m ✓R OR = 14,5 : x ✓A = 70 × 14,5 ✓MA = 1 015 cm ÷100 ✓CA ✓C = 10.15 m = 10 m *Skaal* = 70 × 150 = 10 500 = 10 500 ÷1 000 = 10,5 = 10 m (Afrikaans)	1A correct measurement 1MA multiplying by 145 1CA length outdoor dinning 1C converting to metre 1R correct rounded length Accept range: 144 – 146 mm (Eng) Aanvaar omvang: 149-151mm (Afr) (5)	M&P L3

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
2.1.6	Probability = $\frac{17}{68}$ ✓A✓R ✓A *Waarskynlikheid* = 0,25 × 100 = 25% ✓MA = 100 – 25 = 75% ✓MCA OR Probability = $\frac{68-17}{68}$ ✓A ✓A × 100 = 75% ✓MA ✓MCA No, he is not correct./*Nee, hy is nie reg nie.* ✓O	1A correct nominator 1A correct denominator 1MA percentage calculation 1MCA subtracting 1O correct opinion (5)	P L4
2.2.1 *	✓✓RT Subway Street(ENG) /*Metrostraat (AFR)*	2RT correct street name (2)	M&P L1
2.2.2	✓✓RT Hospital/*Hospitaal*	2A correct building name (2)	M&P L1
2.2.3	On Broad Street, turn left and drive in an easterly direction/*By Breëstraat, draai links en ry in 'n oostelike rigting.* ✓A Turn left on Temple Street **and** drive in a northerly direction/*Draai links by Templestraat en ry in 'n noordelike rigting* ✓A Turn left at Miller Street **and** drive in a westerly direction, **passing** Market Street./*Draai links by Millerstraat en ry in 'n westelike rigting, verby Markerstraat.* ✓A Turn right in Subway Road and drive in a northerly direction/*Draai regs in Metrostraat en ry in noordelike rigting.* ✓A The restaurant will be situated on your right-hand side/*Die restaurant sal aan jou regterkant geleë wees.* ✓A	1A first correct direction 1A second correct direction 1A third correct direction 1A forth correct direction 1A location of the restaurant (5)	M&P L2
			[27]

QUESTION/*VRAAG* 3 [26 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
3.1.1 *	Charging Time = 8 × 1,5 ✓MA *Herlaai tyd* = 12 ✓CA = 24 ÷ 12 = 2 days ✓CA	1MA multiplying correct values 1CA total for 8 panels 1CA number of days (3)	M L1
3.1.2	°C = (150 -32) ÷ 1,8 ✓SF = 65,6 ✓CA	1SF substitution correctly done 1CA temperature in Celsius (2)	M L2
3.1.3	Lenght of Panel/ *Lengte van Paneel* = 99,06 × $\frac{76,5}{39}$ ✓RT ✓MA = 194,31 cm ✓CA **OR** *Lengte van Paneel* = $\frac{99,06}{39}$ ✓RT × 76,5 ✓MA = 194,31 cm ✓CA Perimeter/*Omtrek* 2 × (194,31 + 99,06) ✓SF = 2 × (292,37) ✓S = 586,74 cm ✓CA	1RT values 39 and 99,06 1MA conversion 1CA length in cm 1SF correct substitution 1S simplification 1CA perimeter of the panel (6)	M L3
3.1.4	It is cheaper in the long run/ *Goedkoper op die langer duur* ✓O Uninterupted supply of energy/ *Ononderbroke voorsiening van krag* No more load shedding/ *Geen beurtkrag*	2O Any correct answer (2)	M L4
3.2.1	Raduis = 48 ÷ 2 ✓MA = 24cm ✓A	1MA dividing correct values 1A radius (2)	M L2
3.2.2	Inner Height/*Binne hoogte* = 120 – 4 ✓MA = 116 cm ✓A	1MA subtracting 4 1A correct inner height AO full marks (2)	M L2

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
3.2.3	Inner Lenght/*Lengte* = 120 – 4 = 116 Inner Raduis/ = 24 – 2 = 22 ✓MA ✓C Volume = 3,142 × $0,22^2$ × 1,16 ✓SF = 0,1764m^3 ✓CA = 0,1764 × 1 000 ✓C = 176,40 = 180 liters ✓R	**CA from 3.2.2** 1MA subtracting the foam rubber 1C converting cm to m 1SF substitution into formula 1CA volume in m^3 1C converting m^3 to litre 1R volume of the geyser (6)	M L3
3.2.4	✓C Weight/*Gewig* = 180 kg + 14 kg ✓RT = 194 kg ✓CA	**CA from 3.2.3** 1C converting litre to kilograms 1RT adding empty geyser weight 1CA weight of the filled geyser (3)	M L2
			[26]

QUESTION/*VRAAG* 4 [37 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
4.1.1 *	Ratio/*Verhouding* = 4 : 6 ✓RT ✓S = 2 : 3 ✓CA	1RT in correct order 1S dividing both sides by 2 1CA simplest form (3)	M&P L1
4.1.2	Difference/*Verskil* = 12,8 – 8,8 = 4 ✓MA $= \frac{4}{12,8} \times 100$ ✓MA = 31,25% ✓CA **OR** $= \frac{8,8}{12,8} \times 100$ ✓MA = 68,75 = 100 – 68,75 ✓MA = 31,25% ✓CA	1MA calculating the difference 1MA percentage calculation 1CA percentage answer NPR (3)	M&P L2
4.1.3	Western side/ *Westelike kant* ✓✓RT	2RT reading from plan (2)	M&P L2
4.1.4	Morning sun/*Oggendson* ✓RT The bedrooms are situated on the east side where the sun rises. *Die slaapkamers is aan die oostelike kant geleë waar die son opkom* ✓✓O	1RT conclude from plan 2O correct direction and sunrise (3)	M&P L4

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
4.1.5	✓MA Measure/*Meet* = 168 mm ✓C Scale/*Skaal* = 168 : 12 000 ✓MA = 1:71.428 ✓MA = 1 : 71 ✓R	1MA correct length 1MA correct order 1C converting m to mm 1MA method with accuracy 1R scale of the plan Range 167-169 (5)	M&P L3
4.1.6 *	✓SF ✓RT 18,3 m^2 = 6,1 × widht/*breedte* ✓MA Widht = 18,3 ÷6,1 ✓MA = 3 ✓CA **OR** ✓SF Area/*oppervlakte* = 6,1 × 4 ✓RT = 24,4m^2 ✓MA = 24,4 > 18,3 ✓MA ✓CA No, he is not correct/*Nee, hy is nie korrek nie* ✓O	1SF substitution 1RT correct area of the dining room 1MA correct method 1MA changing the subject 1CA length 1O correct conclusion (6)	M L4
4.2.1	✓C Tile lenght/*Teëllengte : 3*04 ÷ 1000 = 0,304m Area/*Oppervlak* = 0,304m^2 ✓MA = 0,0924 m^2 ✓R	1C converting mm to m 1MA calculating area 1R rounded value (3)	M L2
4.2.2	Area/*Oppervlakte* = 27,8 Tiles/*Teëls* = 27,8 ÷ 0,0924 ✓MA = 300,87 ✓CA = 300,87 × 1,05 ✓MA = 316 ✓CA 316 ÷ 6 tiles/box *teëls/bokes* ✓M = 53 ✓CA OR = 300,87 x 1,05 = 315 = 315 ÷ 6 tiles/box *teëls/boks* = 52,5 = 53	**CA from 4.2.1** 1MA dividing by 0,0924 1CA amount of tiles 1MA percentage increase 1CA amount of increased tiles 1M dividing by 6 1CA total boxes **Also Accept** (6)	M L3

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
4.2.3	Adhesive/*Teëlsement* = 27,8 ÷ 6m^2 ✓MA = 4,6 bags/*sakke* ✓CA = 5 ✓CA Cost/*Koste* = R89,90 × 5 = R449,50 ✓CA = R449,50 × 1,15 ✓MA = R516,93 No his budget is not enough/*Nee sy begroting is nie genoeg nie.* ✓O	1MA dividing by 6 1CA number of bags needed 1CA cost of 5 bags 1MA VAT inclusive calculation 1CA cost 1O opinion Also accept R516,90 (6)	M F L4
			[37]

QUESTION/VRAAG 5 [33 MARKS/PUNTE]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
5.1.1	Namib-Naukluft ✓✓RT	2RT reading from maps (2)	M&P L1
5.1.2	Okahandja ✓✓RT	2RT reading from map (2)	M&P L1
5.1.3	Litres/*Liters* = $55 \times \frac{396}{100}$ ✓RT ✓MA = 217,8 ✓CA	1RT values 55 and 396 1MA multiply by 396 1CA number of litres (3)	M L2
5.1.4 (a)	To refuel / *brandstof ingooi* To check the cargo/*Vrag inspeksie* To refresh/*Om te verfris* Traffic Roadblock/*Verkeersstop* To use the tiolet/*Tiolett te gebruik* Tyre burst/*Wiel bars* He drove almost half of the total distance so he needs a rest/*Hy het amper die helfte van die totale afstand gery so hy het rus nodig.* ✓✓O	2O any correct opinion (2)	M&P L4
5.1.4 (b)	Time/*tyd* = $\frac{396km}{72km/h}$ ✓MA = 5,5 hours/*uur* ✓SF = 5 hours 30 min ✓CA Arrival Time/*Aankomstyd*: H = 5,5 + 0,25 (15 min) ✓MA = 5,75 (5 hours 45 min) = 8 hours 30 min + 5 hours 45 min = 14:15 min. ✓CA No, he is wrong./*Nee, hy is verkeerd.* ✓O	1MA changing subject of formula 1SF correct substitution 1CA speed calculated 1MA adding 15 min 1CA arrival time 1O correct opinion (6)	M L4

Q/V	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
5.2.1 *	Circumference of a circle/ $= \frac{70 \times 2}{100} \times 3{,}142$ ✓C ✓SF *Omtrek van sirkel* $= 4{,}3988$ m ✓CA **OR** $= 2 \times 3{,}142 \times 70$ ✓SF $= 439{,}88$ cm $= 439{,}88 \div 100$ ✓C $= 4{,}3988$ m ✓CA	1C converting diameter 1SF correct substitution 1CA circumference (3)	M L2
5.2.2	Lenght/*Lengte* $= 75{,}60 \div 0{,}6^2$ ✓SF $= 210$ feet/*voet* ✓CA $= 0{,}3048 \times 210$ ✓C $= 64{,}008$m ✓CA No, he is not correct/*Nee, hy is nie korrek nie* ✓O	1SF correct substitution 1CA answer in feet 1C converting feet to metre 1CA length in m 1O opinion (5)	M L4
5.2.3	It is easier to roll To protect the copper cable In order to cover the reel with wood or plastic Loading and off loading ✓✓O	2O marks for any correct opinion (2)	M L4
5.3.1	Lenght/*Lengte* $= 15{,}8 \div 1{,}5 = 10{,}5$ ✓RT Widht/*Breedte* $= 2{,}5 \div 1{,}15 = 2.17$ ✓MA Total reels/*Totaal tolle* $= 10 \times 2 = 20$ ✓R ✓M ✓CA	1RT Values 15,8 and 2,5 1MA dividing by 1,15 1R rounded values 1M multiplying 1CA number of reels (5)	MP L2
5.3.2	Length/*Lengte* : $1{,}5\text{m} \times 10 = 15\text{m}$ ✓MA : $(15{,}8 - 15)$ m $= 0{,}8$ m ✓MA ✓CA	**CA from 5.3.1** 1MA multiply length by 10 1MA subtracting the reel length 1CA remaining length (3)	M L2
			[33]
		TOTAL/*TOTAAL*:	**[150]**

NOTE/LET WEL:

1.1.1	A map of a section of a travelling route showing distances between towns as Straight lines/*'n Kaart van 'n gedeelte van 'n reisroete wat afstande tussen dorpe as reguit lyne aandui.*	Full marks for the written explanation
1.1.2	A prism that is named after the 3-dimensional shape that has rectangles as its faces or base / *'n Prisma wat genoem word na die 3-dimensionele vorm wat reghoeke as sy vlakke of basis het.*	
1.1.3	A unit of volume measurement that's 1 metre wide, 1 metre in height, and 1 metre in depth / *'n Eenheid van volumemeting wat 1 meter breed, 1 meter hoog en 1 meter diep is.*	
1.2.1	Accept 753 calculated	1 out of 3
1.2.2	Accept 750 / 60 and 400 devided by 10 (Convertion mark)	1 out 2
1.2.3	$\frac{8}{15}$ in fraction form	full marks
1.2.5	Impossible	full marks
2.2.1	If the candidates used the different names irrespective of the language paper. e.g If the afrikaans learners wrote Subway street OR the English learners wrote Metrostraat	full marks
3.1.1	Charging Time = 8 × 1,5 ✓MA *Herlaai tyd* = 12 -10 ✓CA = 2 = 24 ÷ 2 = 12 days	2 out of 3
4.1.1	Ratio/*Verhouding* = 4 : 5 ✓RT ✓CA	2 out of 3