

METRO EAST EDUCATION DISTRICT

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SEPTEMBER PREPARATORY CLUSTER EXAMINATION

MATHEMATICAL LITERACY PAPER 2

TASK No.: 6

8 SEPTEMBER 2025

MARKS: 150

TIME: 3 hours

This question paper consists of 14 pages and a 18-page answer book

INSTRUCTIONS AND INFORMATION:

1. This question paper consists of FIVE questions. Answer ALL the questions.
2. Answer ALL questions in the SPECIAL ANSWER BOOK provided.
3. You may use an approved calculator (non – programmable and non – graphical), unless stated otherwise.
4. Show ALL the calculations clearly.
5. Round off ALL final answers appropriately to the given context, unless stated otherwise.
6. Indicate units of measurement, where applicable.
7. Maps and diagrams are NOT necessarily drawn to scale, unless stated otherwise.
8. Write neatly and legibly.



QUESTION 1

- 1.1 TABLE 1 below has a list of explanations and definitions of concepts used in Mathematical Literacy.

TABLE 1: EXPLANATIONS AND DEFINITIONS OF CONCEPTS

A	Information about the profile of a route as seen from the side.
B	The amount of 3-D space occupied by an object.
C	A prism that is named after the 3-dimensional shape that has rectangles as its faces and base.
D	Area of a rectangle which sides' length is 1 m.
E	A map of a small area such as a town or city.
F	A Two – dimensional shape of which 2 lengths are equal to each other.
G	The amount of space available to hold something.
H	Shows a specific route, for instance for an event, as seen from above.

Use the information above to write down the letter (A – H) of the explanation or definition of EACH of the following concepts.

- 1.1.1 m^2 (2)
- 1.1.2 Elevation map (2)
- 1.1.3 Rectangular prism (2)
- 1.1.4 Route map (2)

1.2

The picture of a framed mirror is shown alongside.

The dimensions and measurements of the framed mirror are shown in TABLE 2 below.

TABLE 2: DIMENSIONS AND MEASUREMENTS

Item	Mirror		Frame	
Dimensions	Length	Width	Length	Width
Measurements	160 cm	50 cm	200 cm	55 cm

The thickness of the frame is 2,5 cm.

Picture of a framed mirror:



Adapted from mrphome.com

Use all the information above to answer the questions that follow.

1.2.1 Complete the following statement by providing the missing measurement:

The outside dimensions of the rectangular white part of the frame marked with **A** has the following measurements:

The measurement of **B** is 37,5 cm and the measurement of **C** is ... cm. (2)

1.2.2 Convert to mm the length of the mirror. (2)

1.2.3 Identify the dimension and item that measures half a metre. (2)

1.2.4 Choose the letter that makes the following statement TRUE.

The perimeter of the mirror can be calculated as follows:

A $2 \times (160 \times 50)$

B $2 \times (160 + 50)$

C $2 \times 3,142 \times 25$

D $160 + 160 + 50$ (2)

1.3

Two clocks and the timetable of a Mathematical Literacy teacher are shown below.

TWO CLOCKS:

CLOCK 1	CLOCK 2
	13 : 15

TIMETABLE:

Time	08:30 – 09:25	09:25 – 10:20	10:20 – 11:15	11:15 – 11:45	11:45 – 12:40	12:40 – 13:35	13:35 – 14:30
Period / Day	Period 1	Period 2	Period 3	Break	Period 4	Period 5	Period 6
Day 1	Gr 11 G	Gr 12 I	Gr 12 D		Gr 11 C	Admin	Gr 12 C
Day 2	Admin	Gr 12 C	Gr 11 C		Gr 12 D	Gr 11 G	Gr 12 I
Day 3	Gr 12 C	Gr 11 G	Gr 12 I		Admin	Gr 12 D	Gr 11 C
Day 4	Admin	Gr 12 D	Gr 12 I		Gr 11 C	Gr 11 G	Gr 12 C
Day 5	Gr 12 C	Gr 11 G	Gr 12 I		Gr 12 D	Gr 11 C	Admin

Use the information above to answer the questions that follow.

- 1.3.1 Identify the time format used to indicate the times of the periods. (2)
- 1.3.2 Write down the total number of periods for ONE class during this 5 – day timetable. (2)
- 1.3.3 Identify the class the Mathematical Literacy teacher will be teaching at the time shown on the digital clock on Day 4. (2)
- 1.3.4 Determine the length of the break in hours. (2)

1.4 A Mathematical Literacy class investigated the BMI (Body Mass Index) status of swimmers.

The findings, which shows the swimmers' BMI status data are presented in TABLE 3 below. TABLE 4 provides the BMI status categories used for classification.

NOTE: Some of the information in TABLE 3 is omitted.

TABLE 3: BMI STATUS DATA OF SWIMMERS

	Name of Swimmer	Speciality	Height in m	Mass in kg	BMI	Status
1	Aisha Patel	Freestyle	1,70	62	21,5	Normal
2	Marcus Johnson	Backstroke	1,85	78	22,8	...
3	Zara Mohamed	Butterfly	1,62	55	21,0	Normal
4	Liam van der Merwe	Breaststroke	1,78	74	...	Normal
5	Kaia Nkomo	Medley	1,68	59	20,9	Normal

TABLE 4: BMI STATUS CATEGORIES

BMI	Status Category
Below 18,5	Under Weight
18,5 – 24,9	Normal Weight
25,0 – 29,9	Overweight
30,0 and above	Obese

Use the above TABLE 3 and TABLE 4 to answer the questions that follow:

1.4.1 Convert, to gram, the mass of Zara. (2)

1.4.2 Write down the BMI status of Marcus. (2)

1.4.3 The BMI calculation of Liam is done below.

Select the letter (A, B, C, or D) that shows the correct calculation.

A BMI of Liam = $\frac{74}{1,78^2} = \frac{74}{(1,78 \times 1,78)} = 23,4$

B BMI of Liam = $\frac{74}{1,78^2} = \frac{74}{(1,78^2 + 2)} = 41,6$

C BMI of Liam = $\frac{74}{1,78^2} = \frac{74}{(1,78 \div 2)} = 83,1$

D BMI of Liam = $\frac{74}{1,78^2} = \frac{74}{(1,78 \times 2)} = 20,8$

(2)

[30]

QUESTION 2

- 2.1 The floor plan and an elevation of the Bezuidenhout's family home is shown on ANNEXURE A in the ANSWER BOOKLET.

Use ANNEXURE A in the ANSWER BOOKLET to answer the questions that follow.

- 2.1.1 Identify the room that is on your right-hand side, if you enter the house through the second double door. (2)
- 2.1.2 Write down the total number of doors leading into the bedrooms. (2)
- 2.1.3 Convert, to metres, the interior length of the kitchen. (3)
- 2.1.4 Calculate, in mm, the length of the wall marked, A. (4)
- 2.1.5 Determine the scale of the floorplan using the interior width of the dining room. (4)
- 2.1.6 Mr. Bezuidenhout's son made the following statement: 'The Northern Elevation of the house is shown on the plan.'
- Critically comment, by providing a reason, whether you agree or disagree with this statement. (3)

2.2

Mr. Bezuidenhout plans to take his family on road trips. He will use the strip map on ANNEXURE B in the ANSWER BOOKLET to plan his trips.

Use ANNEXURE B in the ANSWER BOOKLET, to answer the questions that follow.

2.2.1

Mr. Bezuidenhout travels from George to Beaufort West and then turns left onto the N1.

After driving 281 km, he turns right. The first town he reaches on this road is his destination.

Write down the name of the town.

(2)

2.2.2

Determine the distance of the shortest route from Wolseley to Colesberg.

(4)

2.2.3

Determine the probability, as a decimal, of randomly driving on a national road out of all the roads shown on the map.

(3)

2.2.4

Mr. Bezuidenhout and his family plan a road trip from Worcester to Bloemfontein.

His vehicle has a fuel tank capacity of 50 litres and a fuel consumption rate of 5,9 ℓ per 100 km. The petrol price is R21,79 per litre.

He stated that he will need less than R860,00 to fill up his tank at Colesberg.

Verify, showing all your calculations, if his statement is correct.

(6)

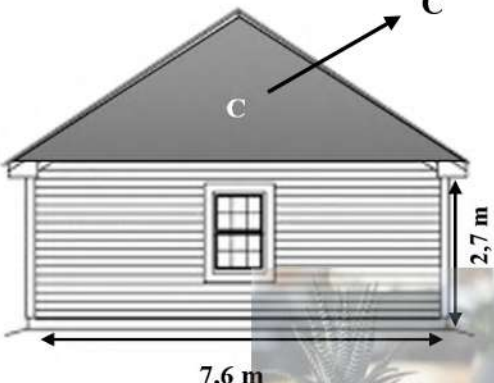
[33]

QUESTION 3

3.1

The Cupido's own a workshop. They are planning to put cladding bricks on the eastern wall of the workshop.

The diagram below shows a representation of the eastern wall of the workshop as well as some information about the cladding bricks to be used.

Diagram of the eastern wall of the workshop	Information about Cladding Bricks
	
NOTE: - The part marked C will NOT be cladded. - The area of the window is $0,9 \text{ m}^2$	NOTE: ONE Box contains: 52 cladding bricks Size of ONE cladding brick: 211 mm $\times$ 64 mm Price per box: R425,00 (VAT excl.) The bricks can be cut and any size brick can then be used.

You may use the formula:

Area of rectangle = Length $\times$ Width

[Adapted from bricktileshop.co.za]

Use the information above to answer the questions that follow.

- 3.1.1 Identify the shape of the part marked C. (2)
- 3.1.2 Show through calculations, that the area of the wall that must be cladded is $19,62 \text{ m}^2$. (3)
- 3.1.3 Calculate the number of boxes of cladding bricks that the Cupido's will need to buy to cover the eastern wall. (7)
- 3.1.4 Calculate the total cost of the cladding bricks, including VAT, to cover the wall. (4)

3.2

A cylindrical steel drum is used to store used oil and must be painted with red paint. The bottom part of the steel drum will not be painted.

The diameter of the steel drum is 0,584 m and the height is 89 cm.

It takes one litre of paint to cover 3 m^2 .

Picture of Steel Drum:



[Adapted from supplywise.co.za]

3.2.1 Determine the radius of the drum.

(2)

3.2.2 Two coats of paint will be applied to the drum.

Calculate, rounded to the nearest litre, the amount of paint needed to paint the surface area of the steel drum.

You may use the formula:

Surface area of an open cylinder =

$$3,142 \times \text{radius}^2 + 2 \times 3,142 \times \text{radius} \times \text{height}$$

(6)

3.2.3 Mr. Cupido claims that the volume of the drum is $238\,430,5 \text{ cm}^3$.

Verify, showing all your calculations if his claim is correct.

You may use the formula

$$\text{Volume} = 3,142 \times \text{radius}^2 \times \text{height}$$

(5)

[29]

QUESTION 4

4.1 The Marakele National Park, in Limpopo forms part of the SANPARKS group.

A map of the Marakele National Park is shown on ANNEXURE C in the ANSWER BOOK

Use ANNEXURE C in the ANSWER BOOK to answer the questions that follow.

4.1.1 Write down the number of dams indicated on this map. (2)

4.1.2 State the general direction of the landing strip from the Lenong viewing point. (2)

4.1.3 The speed limit in the park is 25 km/h.

Calculate how long, in minutes, it will take a person to travel from the Ikhutseng Picnic Site to the Tlopi Tented camp if they travel at the speed limit.

You may use the formula:

$$\text{Time} = \frac{\text{distance}}{\text{speed}} \quad (5)$$

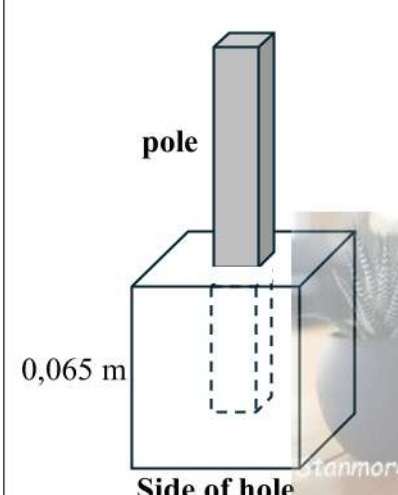
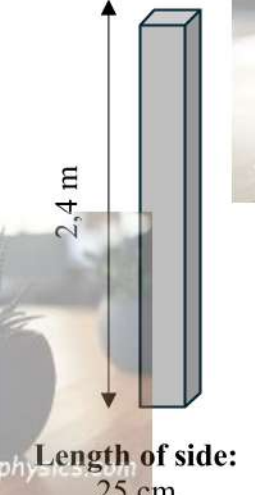
4.1.4 A camper is staying at one of the sites of the Bontle Caravan and Camping site.

Determine the probability, as a percentage, of the camper randomly booking on any loop's camping stands other than the Rhino Loop's camping stands. (4)

4.2

The park wants to put up a large sign outside the entrance gate to help visitors find it more easily.

- The sign will be made from metal and will be attached to TWO square based steel poles.
- The poles will be cemented into the ground into square based rectangular holes with a depth of 0,065 m.
- The volume of soil removed to make ONE hole is 0,012584 m³
- The amount of space in the hole that will be taken up by each pole is 0,0041 m³.

Sketch of the pole cemented in the hole	Sketch of square based pole	Easy Mix Concrete to be used
 0,065 m Side of hole	 2,4 m Length of side: 25 cm	 Price per container: R105 Instructions: Mix contents with 2 litres of water to make 10 litres of concrete.

You may use the following formulae:

Surface Area of pole = $2 \times (\text{side})^2 + 4 \times (\text{height} \times \text{side})$

Volume of hole = $(\text{side of hole})^2 \times \text{depth}$

NOTE:

1 m³ = 1 000 litre

[Adapted from: Cashbuild, Builders Warehouse & Department of transport]

Use the information above to answer the questions that follow:

- 4.2.1 The entire pole needs to be covered with a protective coating to make it last longer.

Determine, in m², the total surface area of the pole that will need to be covered.

(4)

- 4.2.2 Calculate, in m, rounded to two decimal places, the length of a side of the hole.

(4)

- 4.2.3 The construction company stated that the total cost of the concrete for the project will be R210.

Verify, showing all calculations, whether this statement is valid.

(7)

[28]

QUESTION 5

5.1

The Live Theatre in London is a small theatre where schools and artists can perform.

The theatre consists of THREE sections: Cabaret, Middle, and Balcony.

Each section contains rows of seats (A, B, C, E, F) which are divided into blocks.

NOTE:

Patron – A person attending a performance at a theatre

A seating plan of the Theatre is shown on ANNEXURE D in the ANSWER BOOK.

[Adapted from: live.org.uk]

Use the information above as well as ANNEXURE D to answer the questions that follow.

5.1.1 Write down the row with the least number of seats. (2)

5.1.2 A patron follows the following route to get to their seat:

- Enter the theatre on ground floor.
- Go up the stairs to the next floor.
- Turn right to walk to your seat
- Walk past the first block of seats.
- Turn left and walk past the first row.
- Your seat is the second seat in the second block.

Write down the row and seat number of the patron. (2)

5.1.3 Write as a unit ratio the number of side seats to the number of other seats on the middle ground floor of the theatre section. (3)

5.1.4 Determine the total number of patrons that can be seated in the Cabaret Section. (2)

5.1.5 The theatre company decides to make four seats wheelchair friendly in the Middle section.

Identify the possible seats and provide ONE reason for your answer. (3)

5.1.6 Each table can fit 6 chairs.

Provide one possible reason why the theatre company placed four chairs at each table. (2)

5.1.7 Each table will be covered with a standard tablecloth, as shown in the picture alongside.

Use the information provided to calculate the conversion factor between cm and inches in the format 1 cm = ... inches

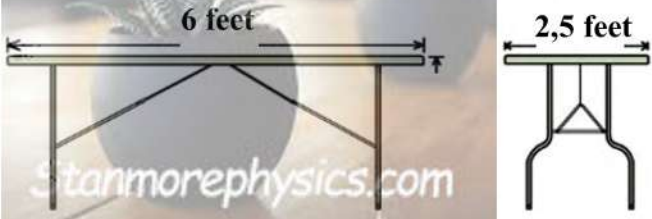


(3)

5.2

A local high school has obtained permission from the theatre to sell popcorn as part of their fundraising during their annual theatre production.

The diagrams below show sketches, with dimensions of the popcorn containers and tables:

Containers of popcorn	Table on which popcorn will be placed
	
NOTE: 1 foot = 0,3048 m	

[Adapted from: kingcup.com& bakagain.com]

Use the information above to answer the questions that follow:

5.2.1 The best temperature to pop popcorn at is 345 degrees Fahrenheit (°F).

Convert this temperature to degrees Celsius (°C).

You may use the following formula:

$$^{\circ}\text{F} = (^{\circ}\text{C} \times 1,8) + 32 \quad (3)$$

5.2.2 Calculate, in cm^3 , the volume of ONE popcorn container.

You may use the following formula:

$$\text{Volume} = \text{Length} \times \text{Width} \times \text{Height} \quad (2)$$

5.2.3 The educator claims that 36 containers of popcorn will be able to fit on ONE table if the length of the popcorn containers are packed along the length of the table.

Verify, showing all calculations whether his claim is valid. (8)
[30]

TOTAL: 150

NAME OF SCHOOL

**METRO
EAST
EDUCATION DISTRICT**

September 2025 Confidential

150

School badge

LEARNER NAME**GRADE 12**

DATE _____

2	0	2	5	0	9	0	8
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BOOK NUMBER

OF

BOOKS

PAPER NUMBER

2

SUBJECT NAME

MATHEMATICAL LITERACY

MARKER

MODERATORS DETAILS IN RELEVANT BLOCK

Question

Marks

Marker Surname & Initials

Marks

Internal

Marks

Buddy

Marks

External

1

2

3

4

5

TOTAL

CONTROLLED AND CERTIFIED CORRECT
SURNAME AND INITIALS OF

READ
INSTRUCTIONS
ON THE NEXT
PAGE

This answer book consists of 18 pages

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Please turn over

FOLLOW THESE INSTRUCTIONS CAREFULLY.

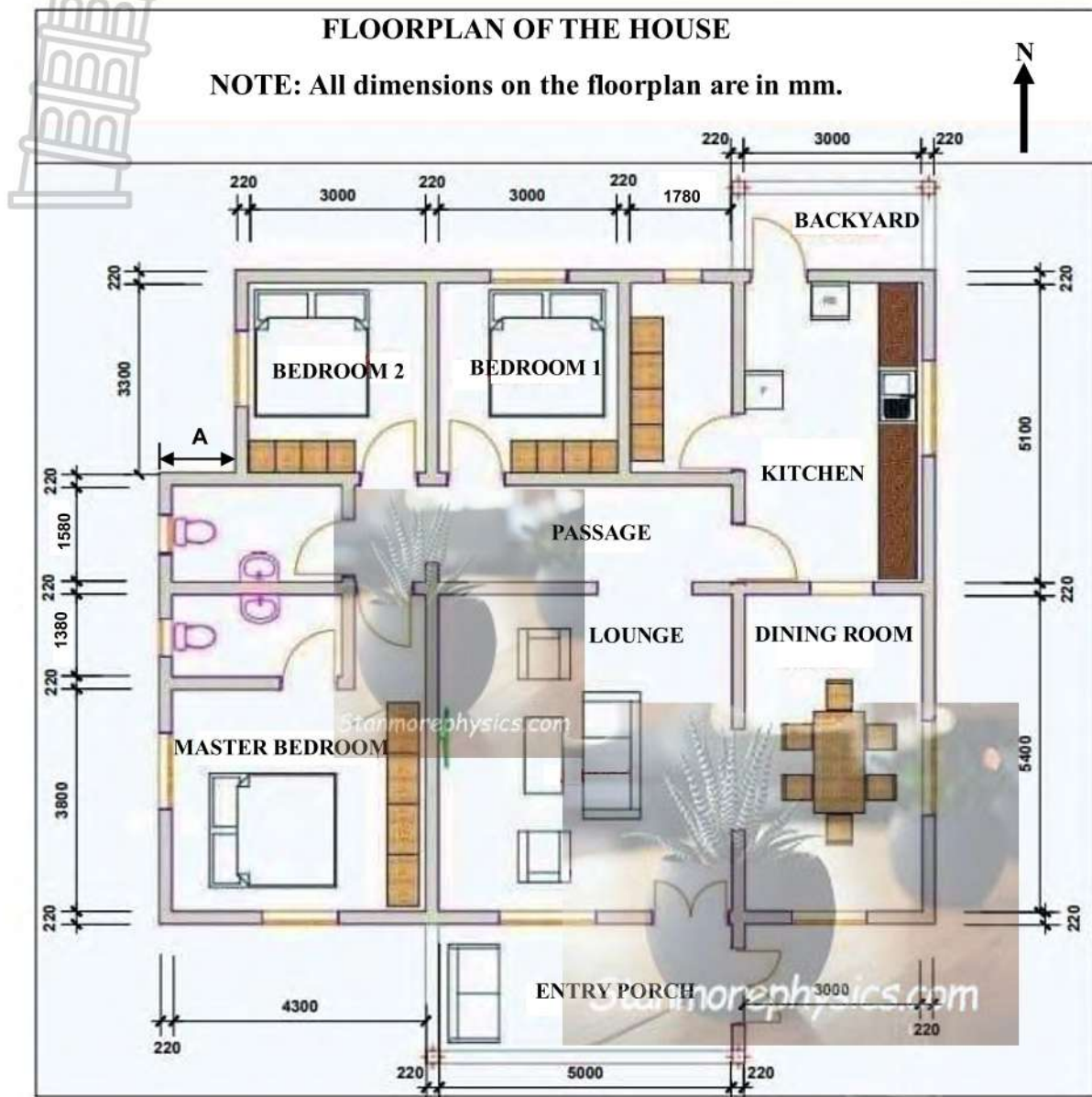
1. Clearly write your name, surname and class number in the space provided.
2. Answer ALL questions in the spaces provided.
3. No pages may be torn from this answer book.
4. Read the instructions in each examination paper.
5. Candidates may not retain an answer book or remove it from the examination room.
6. Answers must be written in black/blue ink as distinctly as possible.
7. Do not write in the margins.
8. If you require additional space for your answers:
 - Use the additional space for rough work provided in the answer book.
 - When answering a question in the additional space, indicate clearly the question number in the column on the left-hand side.
9. Draw a neat line through any work that must not be marked.

QUESTION 1

	Solution	Marks
1.1.1		(2)
1.1.2		(2)
1.1.3		(2)
1.1.4		(2)
1.2.1		(2)
1.2.2		(2)
1.2.3		(2)
1.2.4		(2)
1.3.1		(2)
1.3.2		(2)
1.3.3		(2)
1.3.4		(2)
1.4.1		(2)
1.4.2		(2)
1.4.3		(2)
		[30]

ANNEXURE A

QUESTION 2.1

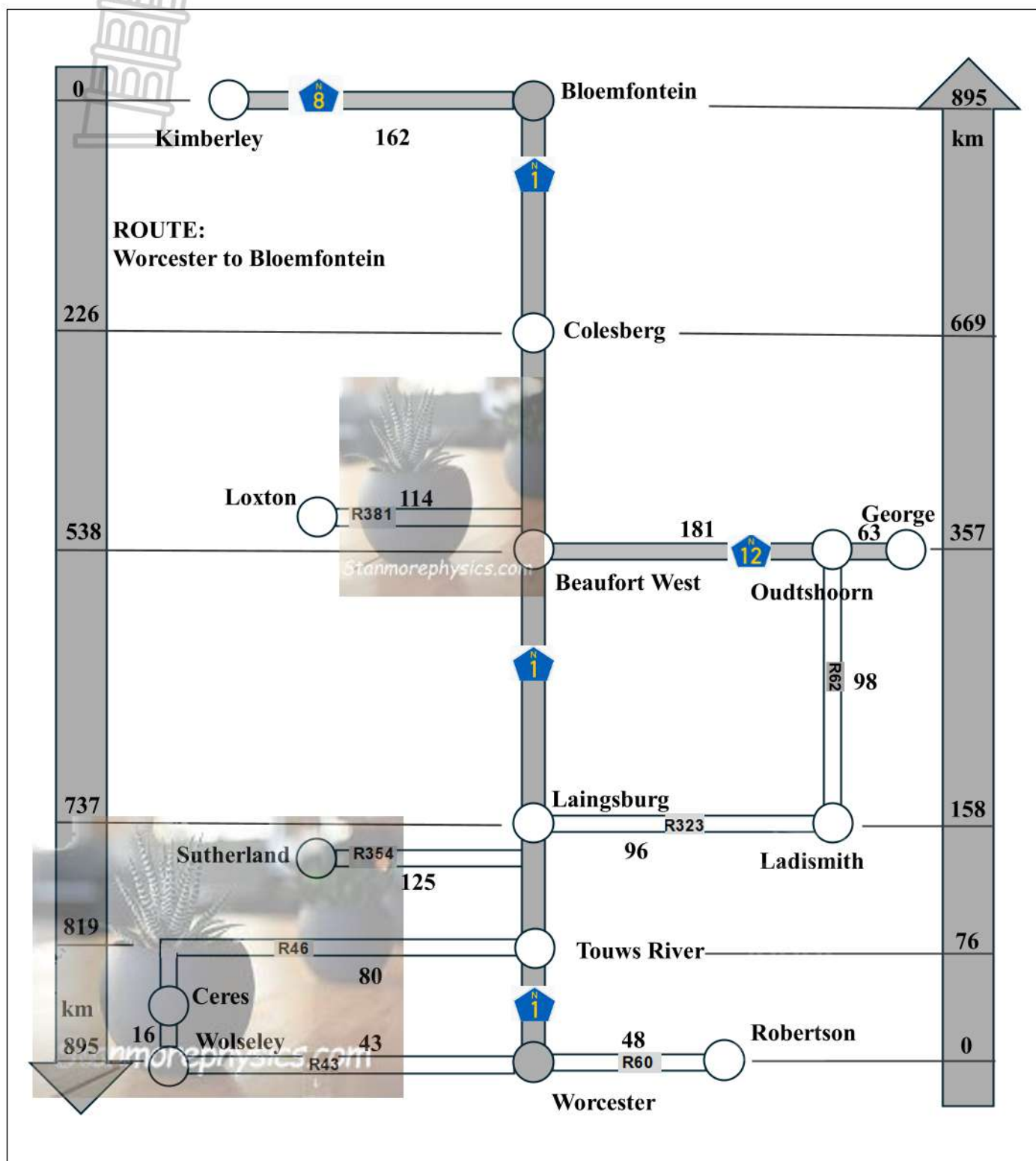


QUESTION 2

	Solution	Marks
2.1.1		(2)
2.1.2		(2)
2.1.3		(3)
2.1.4		(4)
2.1.5		(4)
2.1.6		(3)

ANNEXURE B

QUESTION 2.2

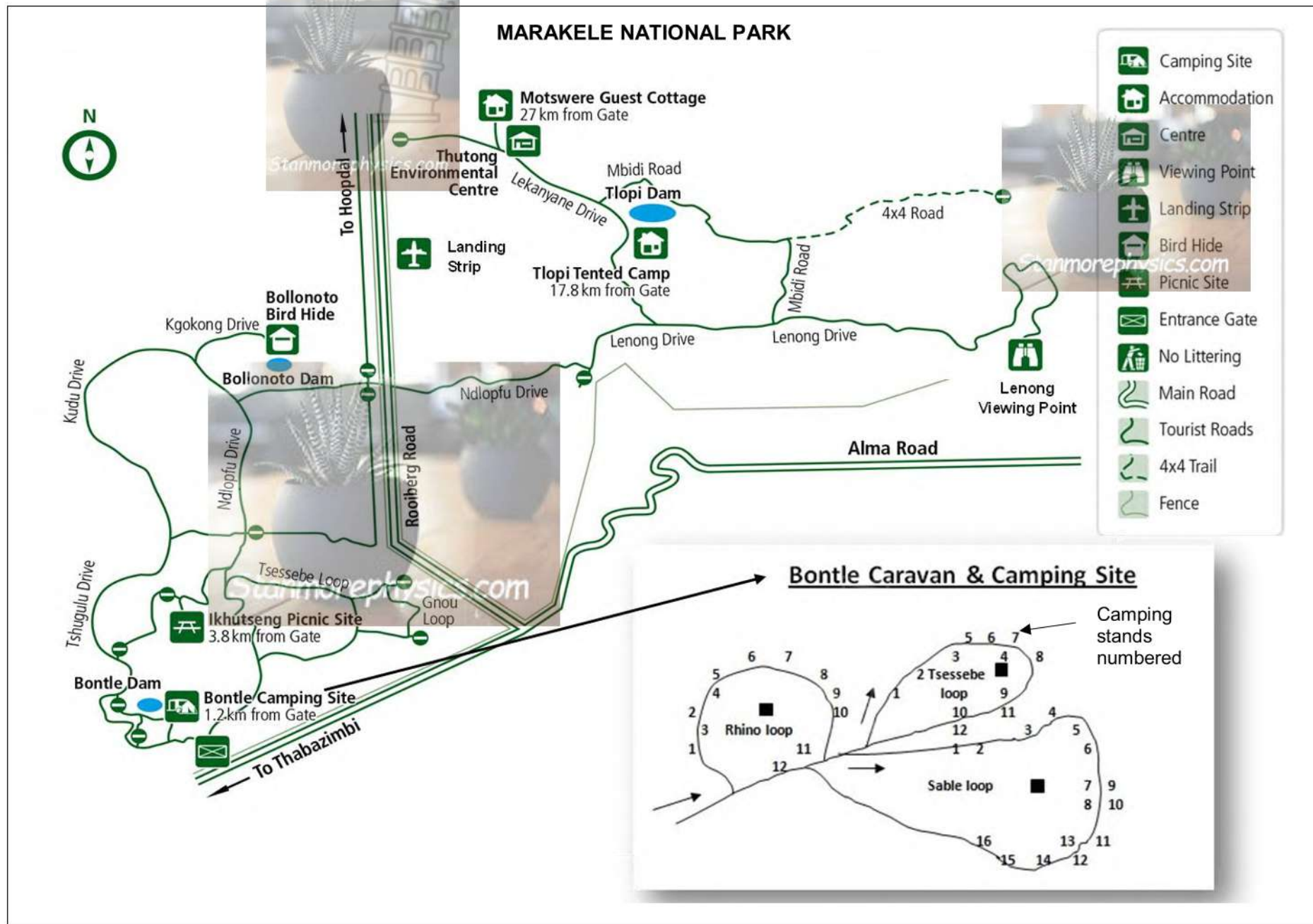


	Solution	Marks
2.2.1		(2)
2.2.2		(4)
2.2.3		(3)
2.2.4		(6)
		[33]

	Solution	Marks
3.1.1		(2)
3.1.2		(3)
3.1.3		(7)
3.1.4		(4)

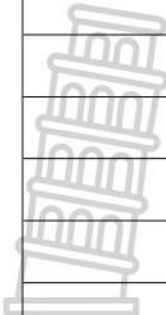
	Solution	Marks
3.2.1		(2)
3.2.2		(6)
3.2.3		(5)
		[29]

QUESTION 4.1



QUESTION 4

	Solution	Marks
4.1.1		(2)
4.1.2		(2)
4.1.3		(5)
4.1.4		(4)

	Solution	Marks
4.2.1		
4.2.2		
4.2.3		
		(7)
		[28]

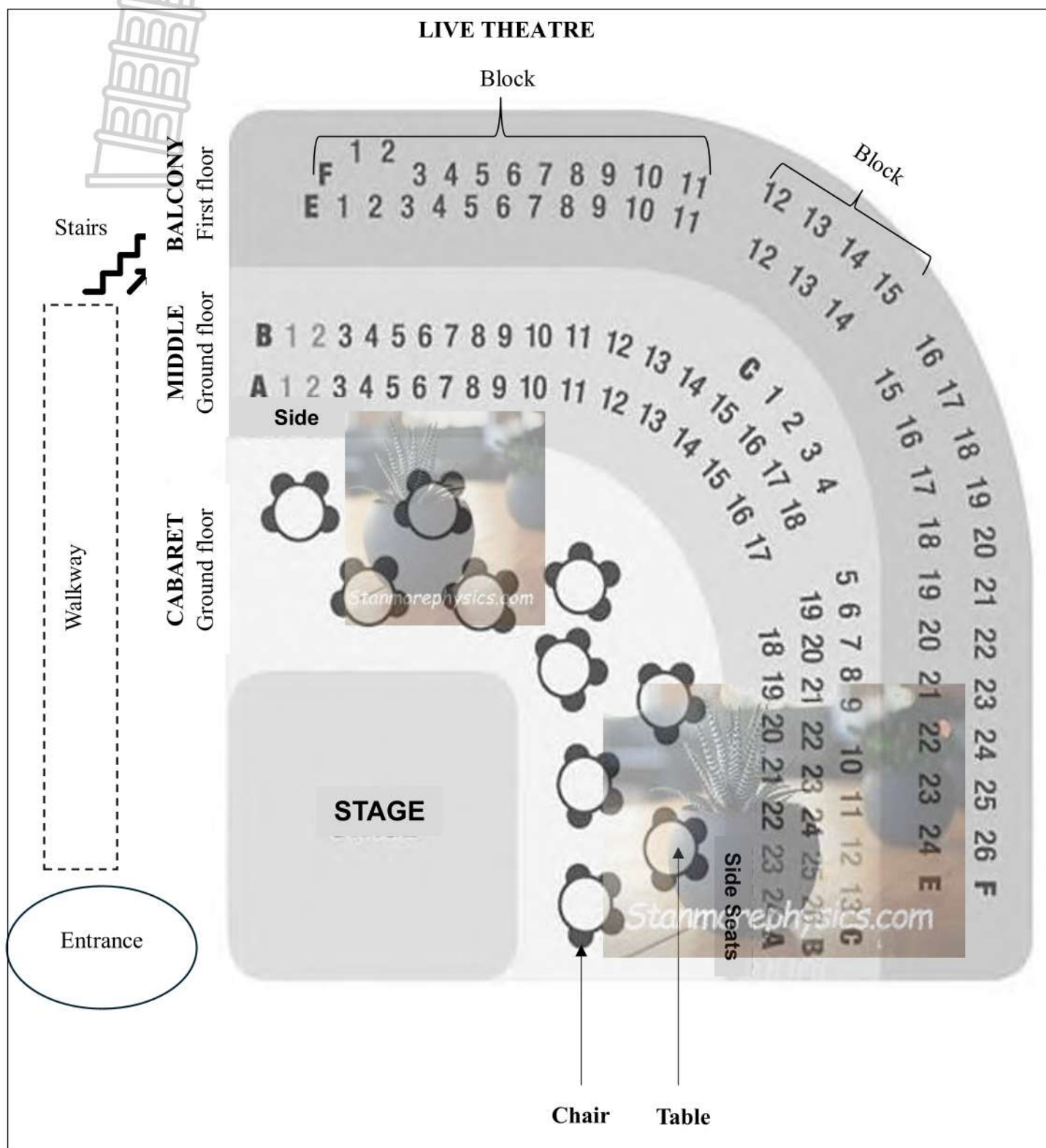


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QUESTION 5.1

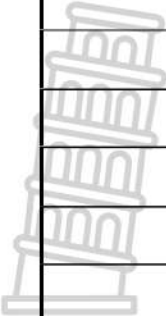


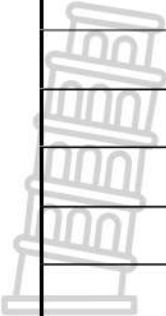
QUESTION 5

5.1.1		(2)
5.1.2		(2)
5.1.3		(3)
5.1.4		(2)
5.1.5		(3)
5.1.6		(2)
5.1.7		(3)

5.2.1		(3)
5.2.2		(2)
5.2.3		(8)
		[30]

TOTAL: 150

	Additional space	Marks
		
		

	Additional space	Marks
		
		



METRO EAST EDUCATION DISTRICT

MATHEMATICAL LITERACY

PAPER 2
SEPTEMBER 2025

MARKING GUIDELINES

Stanmorephysics.com

MARKS: 150

Cognitive Distribution for Assessment:

	Level 1	Level 2	Level 3	Level 4
Expected:	30%	30%	20%	20%
Actual:	28%	28%	21%	23%

Per Topic Distribution for Assessment:

Topic:	Finance	Data Handling	Measurement	Maps & Plans	Probability
% of task:			55%	40%	5%
Actual:			55%	40%	5%

This marking guidelines consist of 10 pages.

Symbol/Kode	Explanation/Verduideliking
MA	Method with accuracy/Metode met akkuraatheid
MCA	Method with constant accuracy/Metode met volgehoue 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/grafiek/diagram
SF	Correct substitution in a formula/Korrekte vervanging in formule
O	Opinion/Explanation/Reasoning /Opinie/Verduideliking/redenasie
P	Penalty, e.g. for no units, incorrect rounding off, etc./Penalisering bv. vir geen eenhede/verkeerde afronding, ens.
R	Rounding off/Afronding
NPR	No penalty for rounding/Geen penalisering vir afronding nie
NPU	No penalty for omitting the unit, but a wrong unit is penalised. / Geen penalisasie indien die eenheid uitgelos is nie, maar 'n verkeerde eenheid word wel gepenaliseer.
AO	Answer only/Slegs antwoord
RCA	Rounding consistent with accuracy/Afronding met volgehoue akkuraatheid

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.
- NOTE: consistent accuracy (CA) does not apply in cases of a breakdown.
- If the candidate presents any extra solution when reading from a graph, table, layout plan and map, then penalise for every extra 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.
- Rounding is an independent mark.
- In order to award the verification / conclusion mark the candidate must have scored at least one mark in the calculations preceding the final conclusion.

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 op by die tweede berekeningsfout.
- Let wel: volgehoue akkuraatheid (CA) geld nie in die geval van 'n afbreuk nie.
- Wanneer 'n kandidaat aflesings vanaf 'n grafiek, tabel, uitlegplan en kaart geneem en ekstra antwoorde gee, penaliseer vir elke ekstra 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.
- Afronding tel as 'n afsonderlike punt.
- Ten einde die verifikasie/ gevolgtrekking punt toe te ken moes die kandidaat ten minste een punt gekry het in die berekening wat lei tot die finale gevolgtrekking.

QUESTION 1 [30 MARKS / PUNTE]		ANSWER ONLY FULL MARKS	
Q/V	SOLUTION	EXPLANATION	T&L
1.1.1	D ✓✓ A	2A correct answer (2)	M L1
1.1.2	A ✓✓ A	2A correct answer (2)	M L1
1.1.3	C ✓✓ A	2A correct answer (2)	M L1
1.1.4	H ✓✓ A	2A correct answer (2)	M L1
1.2.1	55 ✓✓ RT	2RT length (2)	M L1
1.2.2	In mm = 160×10 ✓C = 1 600 ✓ A	1RT 1C length in mm (2)	M L1
1.2.3	Mirror ✓A Width ✓A	1A mirror 1A width (2)	M L1
1.2.4	B ✓✓ A	2A correct answer (2)	M L1
1.3.1	24 h format ✓✓ A	2A correct format (2)	M L1
1.3.2	5 ✓✓ A	2A correct number of periods. (2)	M L1
1.3.3	Gr 11 G ✓✓ A	2A class (2)	M L1
1.3.4	30 minutes = 0,5 h ✓✓ A	1A time in minutes 1A time in hours (2)	M L1
1.4.1	✓ RT Mass in g = $55 \times 1\,000$ = 5 500 ✓ A	1RT correct mass 1A mass in g (2)	M L1
1.4.2	Normal ✓✓ A	2A statuts (2)	M L1
1.4.3	A ✓✓ A	2A correct calculation (2)	M L1
		[30]	

QUESTION 2 [33 MARKS / PUNTE]			
Q/V	SOLUTION	EXPLANATION	T&L
2.1.1	Dining Room / <i>Eetkamer</i> ✓✓ RT	2RT correct room (2)	MP L1
2.1.2	4 ✓✓ RT	2RT number of doors (2)	MP L1
2.1.3	Interior length / <i>Binne lengte</i> = 5 100 mm ✓ RT In m = 5 100 ÷ 1 000 ✓ C = 5,1 ✓ A	1RT interior length 1C dividing by factor 1A length in m (3)	M L2
2.1.4	Northern wall / <i>Noordelike muur</i> = 3 000 × 3 + 1 780 + 220 × 5 = 11 880 mm ✓ MA Southern wall / <i>Suidelike muur</i> = 4 300 + 5 000 + 3 000 + 220 × 4 = 13 180 mm ✓ MA A = 13 180 – 11 880 ✓ MCA = 1 300 mm ✓ CA OR / OF Bedroom / <i>Slaapkamer</i> 2 = 3 000 + 220 = 3 220 ✓ MA Master Bedroom / <i>Hoofslaapkamer</i> = 4 300 + 220 = 4 520 ✓ MA A = 4 520 – 3 220 ✓ MCA = 1 300 mm ✓ CA OR / OF Bedroom / <i>Slaapkamer</i> 1 & 2 & Scullery = 3 000 × 2 + 1 780 + 220 × 3 = 8 440 ✓ MA Master Bedroom / <i>Hoofslaapkamer</i> 2 & Entry Porch / <i>Stoep</i> = 4 300 + 5 000 + 220 × 2 = 9 740 ✓ MA A = 9 740 – 8 440 ✓ MCA = 1 300 mm ✓ CA	1MA northern wall / bedroom 2 1MA southern wall / master bedroom 1MCA subtracting 1CA length of A	MP L2

(4)

2.1.5	Interior widths measured length = 25 mm ✓ A Interior widths length = 3 000 mm ✓ RT 25 mm : 3 000 mm ✓ MA 1 : 120 ✓ CA	1A measurement 1RT interior width 1MA ratio 1CA scale (4)	MP L3
2.1.6	Disagree. <i>Stem nie saam nie.</i> ✓ A It is the southern wall because it has three windows and one double door / <i>Dit is die suidelike muur omdat dit drie vensters en een dubbeldeur het.</i> ✓✓ O OR / OF ✓✓ O The Northern side has two windows and a single door. / <i>Die noordelike kant het twee vensters en 'n enkeldeur.</i> OR / OF ✓✓ O Porch is shown and that is on the southern wall. / <i>Stoep word gewys en dit is op die suidelike muur.</i>	1A statement 2O reason (3)	MP L4
2.2.1	Ceres ✓✓ RT	2RT destination (2)	MP L2
2.2.2	Shortest route / <i>Kortste roete</i> (via Ceres) ✓ MA ✓ MA = 16 + 80 + (669 – 76) ✓ A = 689 km ✓ CA	1A route via Ceres 1MA adding distances 1MA distance of Touws River to Colesburg 1CA distance (4)	MP L2
2.2.3	✓ A $P_{\text{(National Roads)}} = \frac{3}{10} \times 100\%$ ✓ A = 0,3 ✓ CA	1A numerator 1A denominator 1CA decimal (3)	P L3
2.2.4	Distance of Worcester to Colesberg / <i>Afstand van Worcester na Colesberg</i> = 669 km ✓ RT Fuel consumption / <i>Brandstofverbruik</i> 5,9 ℓ : 100 km Amount of ℓ / <i>Hoeveelheid ℓ</i> : 669 km Amount of ℓ / <i>Hoeveelheid ℓ</i> = 669 ÷ 100 × 5,9 OR / OF $\frac{669}{100} \times 5,9$ ✓ MA	1RT distance 1MA using ratio 1CA litres used 1MA multiply with rate 1CA petrol cost	MP L4

$= 39,47 \text{ €} \checkmark \text{CA}$ Petrol cost / Petrol koste $= 39,471 \times R21,79 \checkmark \text{MA}$ OR/OF $R860 \div R21,79 \checkmark \text{MA}$ $= R860,07 \checkmark \text{CA}$ $= 39,47 \text{ €}$ The statement is INVALID. $\checkmark \text{O}$		10 conclusion (6)	
		[33]	

Q/V	SOLUTION	EXPLANATION	T&L
3.1.1	Triangle $\checkmark \checkmark \text{A}$	2A (2)	M L1
3.1.2	Area of the wall = Length $\times$ height $= 7,6 \text{ m} \times 2,7 \text{ m} \checkmark \text{SF}$ $= 20,52 \text{ m}^2 \checkmark \text{CA}$ Area of wall to be tiled $= 20,52 \text{ m}^2 - 0,9 \text{ m}^2 \checkmark \text{MA}$ $= 19,62 \text{ m}^2$	1SF substitute in formula 1CA area 1MA subtracting (3)	M L2
3.1.3	Area of cladding brick = length $\times$ height $= 211 \text{ mm} \times 64 \text{ mm}$ OR / OF $0,211 \times 0,064 \checkmark \text{MA}$ $= 13\,504 \text{ mm}^2 \checkmark \text{CA}$ $= 13\,504 \text{ mm}^2 \div (1\,000)^2$ $= 0,013505 \text{ m}^2 \checkmark \text{C}$ Total number of bricks required $= \frac{19,62}{0,013505} \checkmark \text{MA}$ $= 1452,902844$ $= 1453 \checkmark \text{CA}$ Number of boxes $= \frac{1\,453}{52} \checkmark \text{MA}$ $= 27,94$ $= 28 \checkmark \text{CA}$	1MA substitution 1CA area of brick 1C to m^2 or m 1MA dividing 1CA number of brickss 1MA dividing 1CA number of boxes (7)	M L3
3.1.4	Total Cost including VAT = $R425,00 \times 28 \checkmark \text{MA}$ $= R\,11\,900 \checkmark \text{CA}$ $= R\,11\,900 \times 1,15 \checkmark \text{MA}$ $= R\,13\,685,00 \checkmark \text{CA}$	CA from 3.2.2 1MA multiply by price 1CA price – VAT exclusive 1MA increase with VAT	M L2

		ICA VAT inclusive price (4)	
3.2.1	$\text{Radius} = \frac{0,584}{2} \checkmark \text{MA}$ $= 0,292 \text{ m} \checkmark \text{A}$	1MA divide by 2 1A radius (2)	M L1
3.2.2	$\text{Surface area} \checkmark \text{C}$ $= 3,142 \times (0,292)^2 + 2(3,142) \times 0,292 \times 0,89 \checkmark \text{SF}$ $= 1,900985408 \checkmark \text{CA}$ $= 1,900985408 \times 2 \checkmark \text{MA}$ $= 3,801970818 \checkmark \text{CA}$ $= 4 \ell \checkmark \text{R}$	CA from 3.2.1 1C to m 1SF substitute 1MA multiply by 2 1CA amount of paint 1R rounding (6)	
3.2.3	$\text{Volume} = \pi \times r^2 \times d$ $\text{Volume} = (3,142) \times (0,292 \text{ m})^2 \times 0,89 \text{ m} \checkmark \text{SF}$ $= 0,2384305443 \text{ m}^3 \checkmark \text{CA}$ $= 0,2384305443 \text{ m}^3 \times 100^3 \checkmark \text{C}$ $= 238\,430,5443 \text{ cm}^3 \checkmark \text{CA}$ $= 238\,430,5$ The claim is VALID $\checkmark \text{O}$	CA from 3.2.2 - Conversion 1SF substituting 1CA simplify 1C conversion 1CA volume 1O conclusion (5)	M L4
		[29]	

QUESTION 4 [28 MARKS / PUNTE]

Q/V	Solution/Oplossing	Explanation/Verduideliking	T&L
4.1.1	3 $\checkmark \checkmark \text{A}$	2A number of dams (2)	MP L1
4.1.2	NW $\checkmark \checkmark \text{A}$	2A correct direction (2)	MP L2
4.1.3	$17,8 \text{ km} - 3,8 \text{ km} = 14 \text{ km} \checkmark \text{A}$ $\text{Time/Tyd} = \frac{\text{Distance / Afstand}}{\text{Speed/Spoed}}$ $= \frac{14 \text{ km}}{25 \text{ km h}} \checkmark \text{SF}$ $= 0,56 \text{ h} \checkmark \text{CA}$ $\checkmark \text{C}$ $0,56 \text{ h} \times 60 = 33,6 \text{ minutes} \checkmark \text{CA}$	1A distance between places 1SF values into formula 1CA time in hours 1C time to minutes 1CA time in minutes NPR (5)	MP L3
4.1.4	Total Camp Sites: $12+12+16 = 40$ NOT Rhino: $12+16 = 28$ $\checkmark \text{A} \quad \checkmark \text{MA}$ $\frac{28}{40} \times 100\% = 70\% \checkmark \text{CA}$	1A correct numerator 1A correct denominator 1MA percentage calculation 1CA solution	P L3

	✓A	(4)	
Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
4.2.1	Length of side in m = $25 \text{ cm} \div 100$ $= 0,25 \text{ m}$ ✓C Surface Area of pole = $2 \times (\text{side})^2 + 4 \times (\text{height} \times \text{side})$ ✓RT $= 2 \times 0,25^2 + 4 \times (2,4 \times 0,25)$ ✓SF $= 0,125 + 2,4$ $= 2,525 \text{ m}^2$ ✓CA	1C cm to m 1RT height 1SF substitute 1CA total surface area (4)	M L2
4.2.2	Volume of hole = $(\text{side})^2 \times \text{depth}$ $0,012584 \text{ m}^3 = (\text{side})^2 \times 0,065 \text{ m}$ ✓SF $0,012584 \text{ m}^3 \div 0,065 \text{ m} = (\text{side})^2$ ✓MA $0,1936 \text{ m}^2 = (\text{side})^2$ ✓MA $\text{Side} = \sqrt{0,1936}$ ✓MA $\text{Side} = 0,44 \text{ m}$ ✓CA	1SF values into formula 1MA changing subject of formula 1MA calculating each side 1CA length of each side. (4)	M L3
4.2.3	Space in holes/ <i>Spasie in gate:</i> ✓MA ✓MA $= (0,012584 \text{ m}^3 - 0,0041 \text{ m}^3) \times 2$ $= 0,016968 \text{ m}^3$ ✓CA $1 \text{ m}^3 = 1\,000 \text{ litre}$ In $\ell = 0,016968 \times 1\,000$ ✓C $= 16,968$ ✓MCA $\frac{16,968}{10} = 1,6968 \text{ containers}$ $\approx 2 \text{ containers}$ ✓R Cost = $2 \times \text{R}105 = \text{R}210$ ∴ His statement is valid. ✓O	1MA subtract space taken up by pole 1MA multiply by two 1CA space to be concreted 1C to ℓ 1MCA number of containers 1R rounding up 1O statement valid. (7)	M L4
		[28]	

QUESTION 5 [30 MARKS / PUNTE]			
Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
5.1.1	(Row) C ✓✓A	2A Correct Row (2)	MP L1
5.1.2	F 13 ✓✓A	2A seat (2)	MP L2
5.1.3	✓A ✓A 10 : 53 1: 5,3 ✓CA	1A number of side seats 1A number of other seats 1CA unit ratio (3)	MP L3
5.1.4	40 ✓✓A	2A correct number of patrons (2)	MP L2
5.1.5	✓A A 1&2 and B 1&2 They are close to the entrance and considered side seats. OR They are on the ground floor. ✓✓O	1A correct seats 2O reason for choice (3)	MP L4
5.1.6	They do not want people to sit with their backs to the stage. ✓✓O	2O reason. (2)	M L4
5.1.7	✓RT 305 cm = 120 inches $\frac{305}{305} : \frac{120}{350}$ ✓MA 1 cm = 0,393442623 inches ✓CA	1RT correct values 1MA dividing 1CA correct factor (3)	M L2

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
5.2.1	$\begin{aligned} ^\circ\text{F} &= (^\circ\text{C} \times 1,8) + 32 \\ 345^\circ\text{F} &= (^\circ\text{C} \times 1,8) + 32 \quad \checkmark\text{SF} \\ 345^\circ\text{F} - 32 &= ^\circ\text{C} \times 1,8 \quad \checkmark\text{MA} \\ 313 &= ^\circ\text{C} \times 1,8 \\ 313 \div 1,8 &= ^\circ\text{C} \\ ^\circ\text{C} &= 173,8888889 \quad \checkmark\text{CA} \end{aligned}$	1SF values into formula 1MA changing subject of formula 1CA temperature in degrees Celsius. NPR (3)	M L2
5.2.2	Volume = Length x Width x Height Volume = 20cm x 14cm x 25cm $\checkmark\text{SF}$ Volume = 7 000cm³ $\checkmark\text{A}$	1SF values into formula 1A total volume (2)	M L2
5.2.3	Convert to metric: <u>Length:</u> $\checkmark\text{C}$ $6 \times 0,3048 = 1,8288\text{m}$ $= 182,88 \text{ cm} \quad \checkmark\text{C}$ <u>Width:</u> $2,5 \times 0,3048 = 0,762\text{m} \quad \checkmark\text{CA}$ $= 76,2 \text{ cm}$ Number of containers on table: <u>Length:</u> $\frac{182,88}{20}$ $= 9,144 \text{ containers}$ $\approx 9 \text{ containers} \quad \checkmark\text{MCA}$ <u>Width:</u> $\frac{76,2}{14}$ $= 5,443 \text{ containers}$ $\approx 5 \text{ containers} \quad \checkmark\text{RCA}$ Total Number of containers on table: $\checkmark\text{MCA}$ 9×5 $= 45 \quad \checkmark\text{CA}$ The statement is invalid. $\checkmark\text{O}$	1C from foot to m 1C from m to cm 1CA for length and width in cm 1MCA divide table by containers 1RCA rounding both down 1MCA length x width 1CA total number 1O invalid. (8)	MP L4
TOTAL / TOTAAL: 150			[30]