



PREPARATORY EXAMINATION 2026

MATHEMATICAL LITERACY (10602) PAPER 2

MATHEMATICAL LITERACY: Paper 2



10602E

X05





PREPARATORY EXAMINATION 2026

NAME OF SCHOOL															
CANDIDATE'S NAME															
DATE	M	M	D	D	2	0	2	6	BOOK NUMBER		OF		BOOKS		
TEACHER									PAPER NUMBER	2					
SUBJECT	MATHEMATICAL LITERACY (10602)														

ANSWER ALL THE QUESTIONS IN THE QUESTION PAPER.

QUESTION	MARKER				MODERATORS			
	MARKS		MARKER'S INITIALS		MARKS		MODERATORS' INITIALS	
1	0				0			
2	0				0			
3	0				0			
4	0				0			
5	0				0			
TOTAL								

TIME: 3 hours

MARKS: 150

33 pages

INSTRUCTIONS AND INFORMATION

Read the following instructions carefully before answering the questions.

1. This question paper consists of FIVE questions. Answer ALL the questions.
2. Show ALL calculations clearly.
3. You may use an approved scientific calculator (non-programmable and non-graphical), unless stated otherwise.
4. Round-off ALL final answers appropriately according to the given context, unless stated otherwise.
5. Indicate units of measurement, where applicable.
6. Diagrams are NOT necessarily drawn to scale, unless stated otherwise.
7. No pages may be torn from this question paper.
8. Candidates may not retain a question paper or remove it from the examination room. Question papers must be returned to the invigilator at the end of the examination session.
9. Answers must be written in blue ink as distinctly as possible. Do NOT write in the margins.
10. Indicate the questions that you have answered by drawing a circle around the relevant numbers on the front cover of the question paper where marks are to be recorded.
11. Draw a neat line through any work/rough work that must NOT be marked.
12. In the event that you use the additional space provided:
 - 12.1 Write down the number of the question.
 - 12.2 Leave a line open and rule off after your answer.
13. Write neatly and legibly.

QUESTION 1

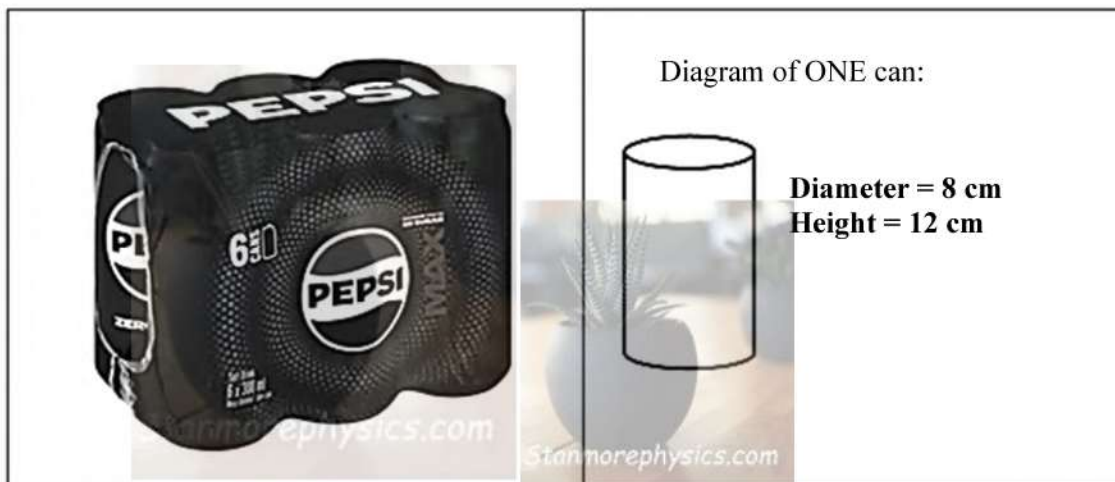
- 1.1 Densi saw Pepsi cold drink cans (cylindrical containers) on promotion. The cans were packaged in groups of six as shown in the image below.

Promotion:

NOW R72

6 x 300 ml

Available from 8 March 2026 – 22 March 2026



1.1.1	Determine the capacity (in litres) of one can of cold drink.	(2)
1.1.2	Write down the radius of one cold drink can.	(2)
1.1.3	Choose the letter of the answer that will make the following statement TRUE. People should only drink cold drinks after 13:00 which is in the ... A morning. B evening. C afternoon.	(2)

- 1.2 Khaalid entered a bicycle race. The picture below shows all the details of the race and the odometer of his bicycle.



Odometer 5740 km

Last ride on 26 June 2026

28,2 km/h

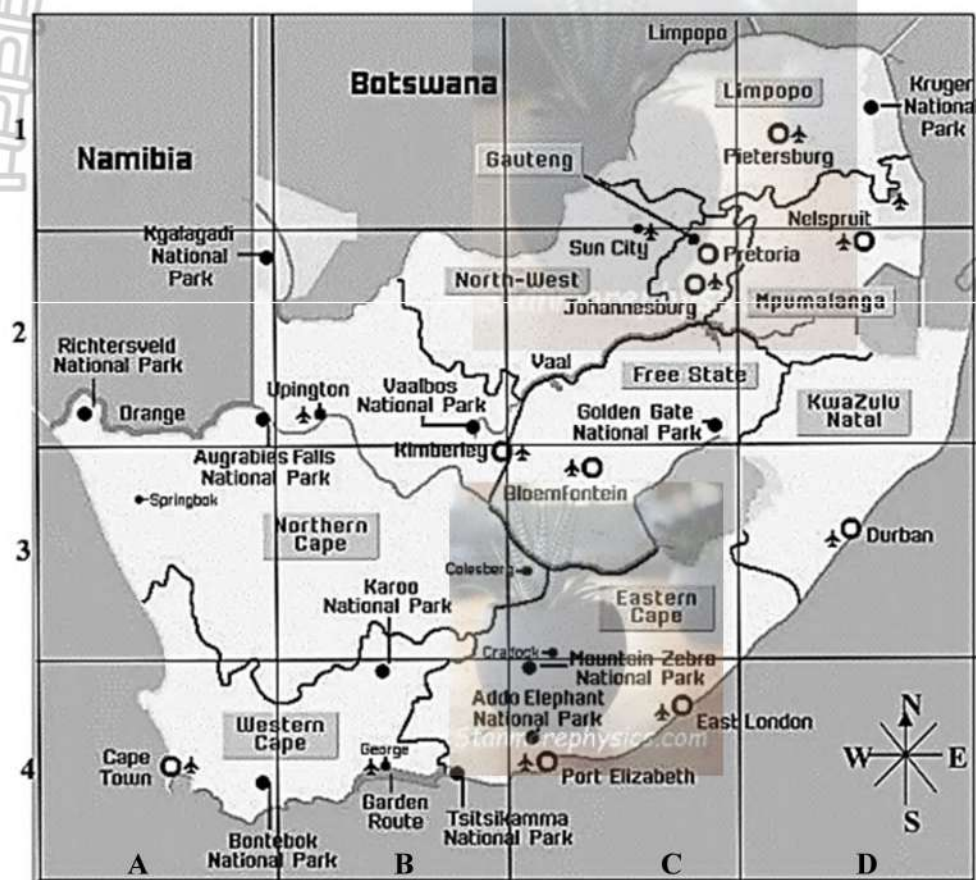
Total distance 64,33 km

Time: 1:53:30



1.2.1	Determine the odometer reading before the race started.	(2)
1.2.2	Round-off the time it took Khaalid to complete the race to the nearest 5 minutes.	(2)
1.2.3	How many metres did Khaalid ride in an hour?	(2)

- 1.3 Below is a map of South Africa. Study the map and answer the questions that follow.



[Source: www.safaribookings.co.za]

1.3.1	Write down the grid reference for the Bontebok National Park.	
		(2)
1.3.2	Identify the holiday destination in D3.	
		(2)
1.3.3	Determine the probability that there is an airport in the Karoo National Park.	
		(2)

A part of a n



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1.4.4	Choose from the options given below, the real distance (in km) from the Voortrekker Monument to Thaba Tshwane if the measured distance is 2,15 cm. Write the answer (A – C) in the block provided.	
	A 43 km B 4,3 km C 430 km	(2)

1.4.5	State whether the following from the map is TRUE or FALSE. The scale indicated on the given map is a number scale.	
		(2)

1.4.6	Explain the meaning of the scale 1 : 200 000.	
		(2)

[30]

QUESTION 2

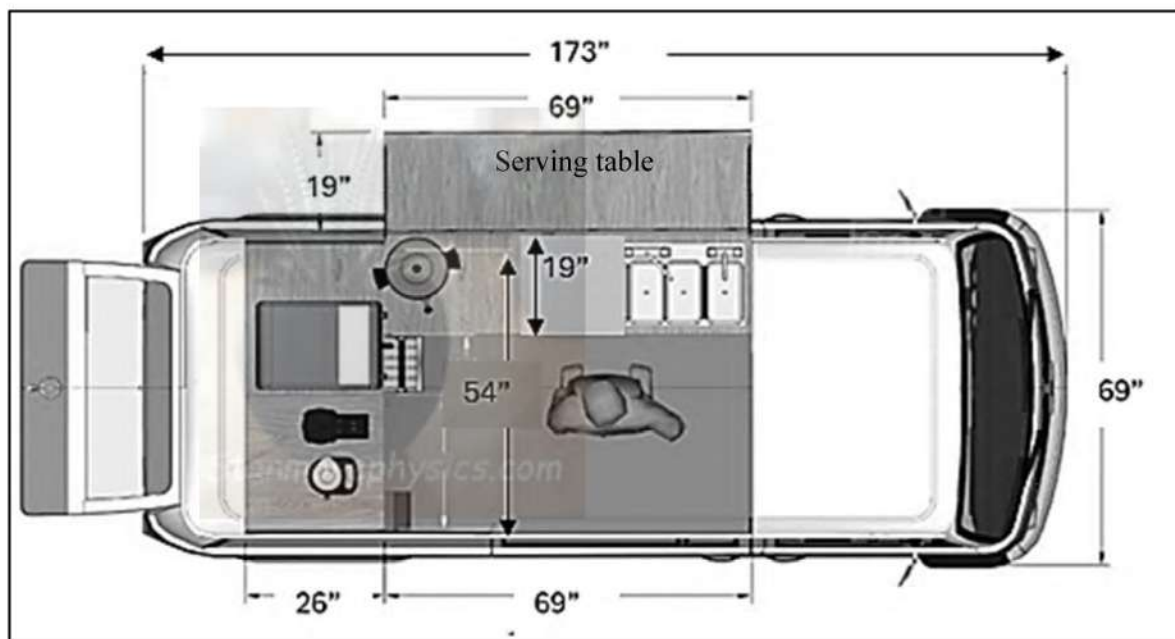
- 2.1 Kombi Coffee has become a popular trend, particularly among university students. It is a mobile coffee outlet operated from a converted Volkswagen Kombi. Below is a diagram showing the design of Michelle's coffee Kombi. The vehicle is a 1988 Volkswagen model, and its dimensions are given in inches.

Study the diagrams below and answer the questions that follow.

Diagram 1: Side view of the "Coffee Kombi"



Diagram 2: Top view of the "Coffee Kombi"



Note: 1 inch = 2,54 cm
" represents inches

2.1.1	Explain what is meant by <i>the perimeter of the kombi</i> .	
		(2)

2.1.2	Use the conversion factor given to calculate the actual length (in cm) of the Kombi, from the bonnet to the rear door.	
		(2)

2.1.3	Calculate the width (in cm) of the Kombi when it is set up to serve coffee, including the serving table attached to the side of the vehicle.	
		(3)

2.1.4	Calculate the total area required for the Kombi when it is stationary and serving coffee. Allow an additional 2 metres in front of the serving table to ensure that customers can queue comfortably. Round-off your final answer to the nearest 10 m. You may use the following formula: Area = length × width	(6)
2.1.5	Michelle wants to hang decorative lights along the front of the Kombi. If the distance between consecutive lights is 20 cm, show by means of calculations, how many lights Michelle needs to buy.	(3)

- 2.2 Coffee culture has become a modern lifestyle trend. Ordering speciality drinks such as cappuccinos or mocha beverages often reflects a person's trendy and refined style.

Coffee shops are now making use of edible coffee cups, known as Cupffee. Cupffee is a cookie-like cup that can be eaten while drinking your favourite beverage or after finishing your drink. These cups are available in 2 sizes, as shown below.

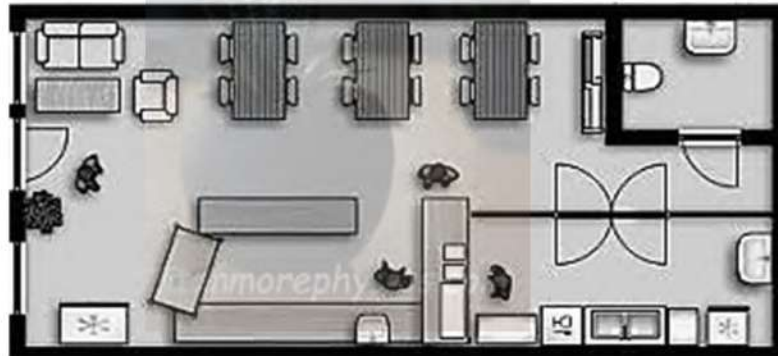


2.2.1	The coffee shop charges: • R18 for a 100 ml cup • R30 for a 250 ml cup Michelle states that a 250 ml cup of Cupffee offers better value for money than a 100 ml cup of Cupffee. Justify, showing ALL calculations, whether Michelle's statement is correct.		

(5)

2.2.2	To make a cappuccino, the barista uses the following ratio of ingredients: Milk : Coffee 3 : 2 For a 250 ml cappuccino, calculate the amount of milk and coffee needed, respectively. * A barista is someone who makes coffee.	
		(4)



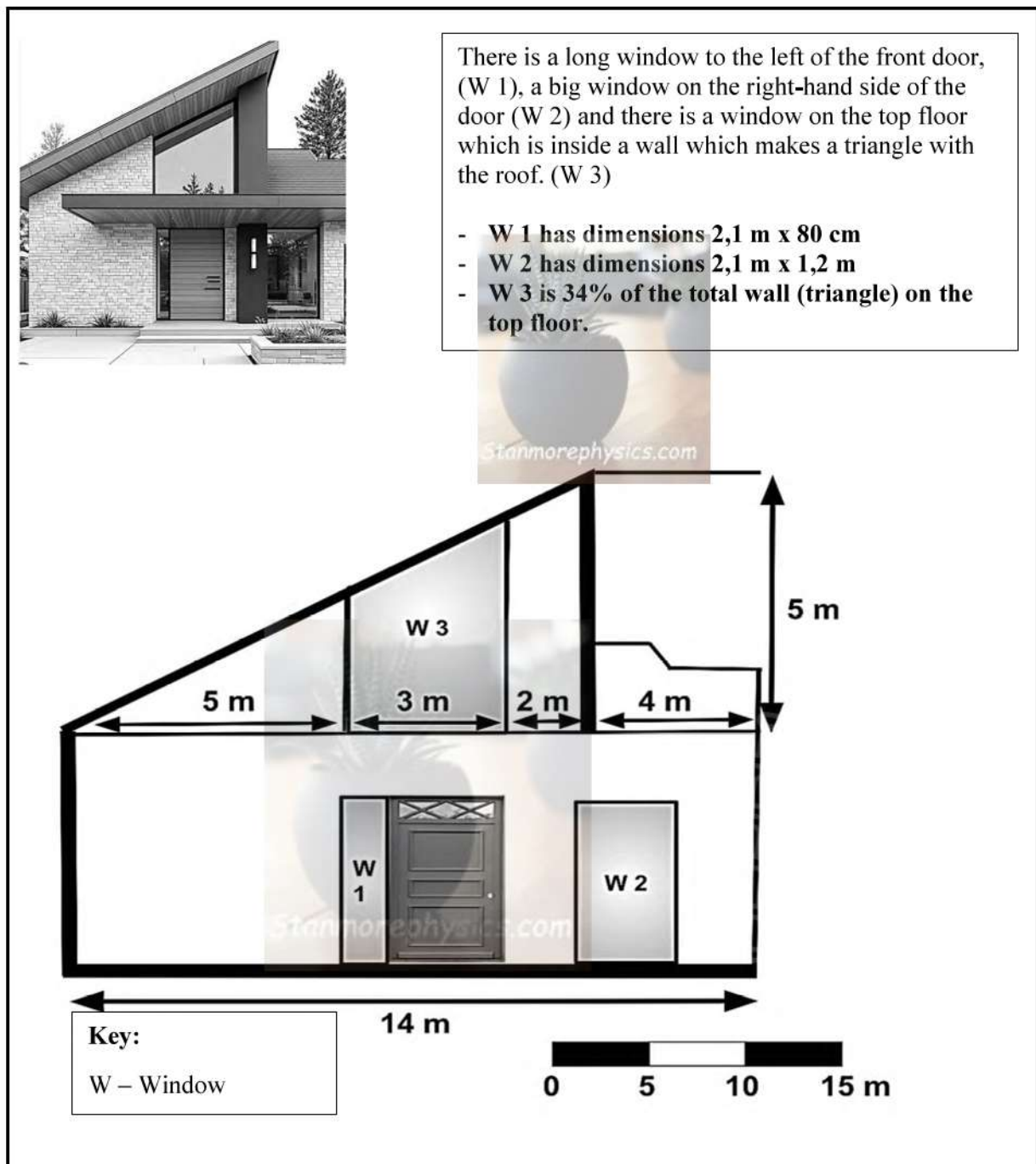
2.3 **Diagram 1: Layout of the current coffee shop****Diagram 2: Design of the upgraded coffee shop**

2.3.1	Name the type of plan given in diagram 1.	(2)
2.3.2	Why do you think the owners will opt for a design as shown in diagram 2 above? Provide TWO reasons. Make a reference to: • Single seats • The standing coffee tables without chairs	(2)
2.3.3	The plan in diagram 2 does not indicate any doors or toilets. Provide ONE reason why you think it does not indicate any details of the inside of the shop.	(2)

QUESTION 3

- 3.1 Lil Jon, the Grammy-winning producer and rapper, hosts the HGTV series *Lil Jon Wants to Do What?*, in which he works with a designer to convince homeowners to take bold, unconventional approaches to their home renovations.

Below is a diagram indicating the front face of one of the houses. Lil Jon wants to tint the front windows.



[Source: www.flipmyhouse.com]

3.1.1	Convert 80 cm to metres.	
		(2)

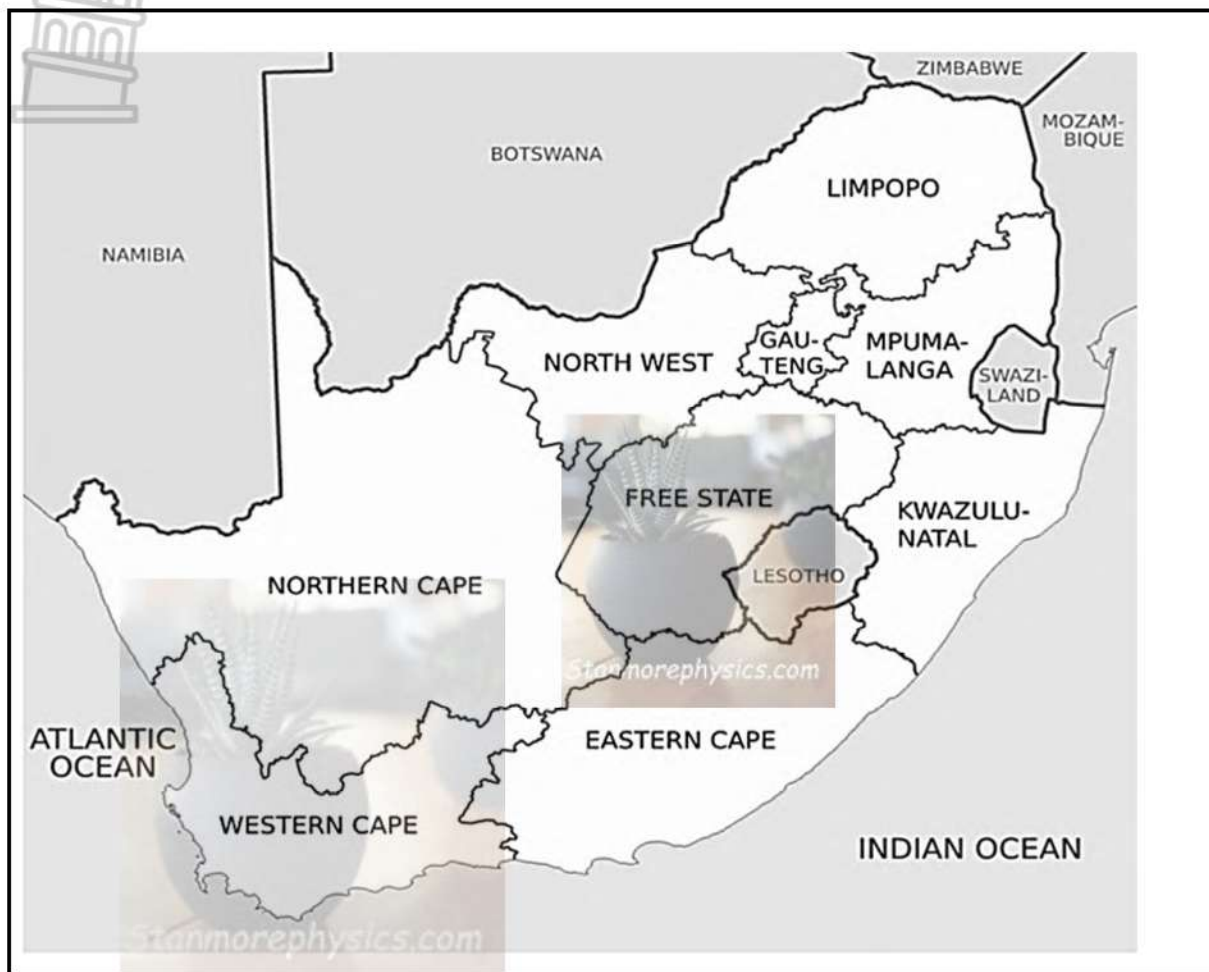
3.1.2	Lil Jon calculated that the total surface area of the windows that he wants to tint is $12,7 \text{ m}^2$. Show, using calculations, that Lil Jon performed the correct calculations. You may use the following formulae: Window 1 and Window 2: Area = length $\times$ width Window 3: Area = $0,5 \times$ base $\times$ height	
		(8)

3.1.3	The colour and darkness of the tinting that Lil Jon wants cost R720/m ² (or part thereof).	
(a)	Explain what R720/m ² means in this context.	
		(2)
(b)	Hence, determine the total cost for the tinting.	
		(3)
3.1.4	Give a possible reason why Lil Jon wants to tint the windows.	
		(2)
3.1.5	The house is north-facing, and Lil Jon is facing the house. In which general direction is Lil Jon facing?	
		(2)
3.1.6	The architect indicated that the actual length of the house is 14 m, and the scaled length is 28 mm. Use these dimensions to determine the ratio scale for the diagram.	
		(3)

3.1.7	The bar scale shows that for every 1 cm on the map, the real length is 5 m. Using the bar scale, show the accuracy between the bar scale and the ratio scale as determined in QUESTION 3.1.6.	
		(4)

- 3.2 South Africa shares borders with other countries, shown on the map below. Lesotho is also shown as a neighbouring country but it is landlocked, meaning it is surrounded by South Africa.

Study the map and answer the questions that follow.



[Source: e-bay.com]

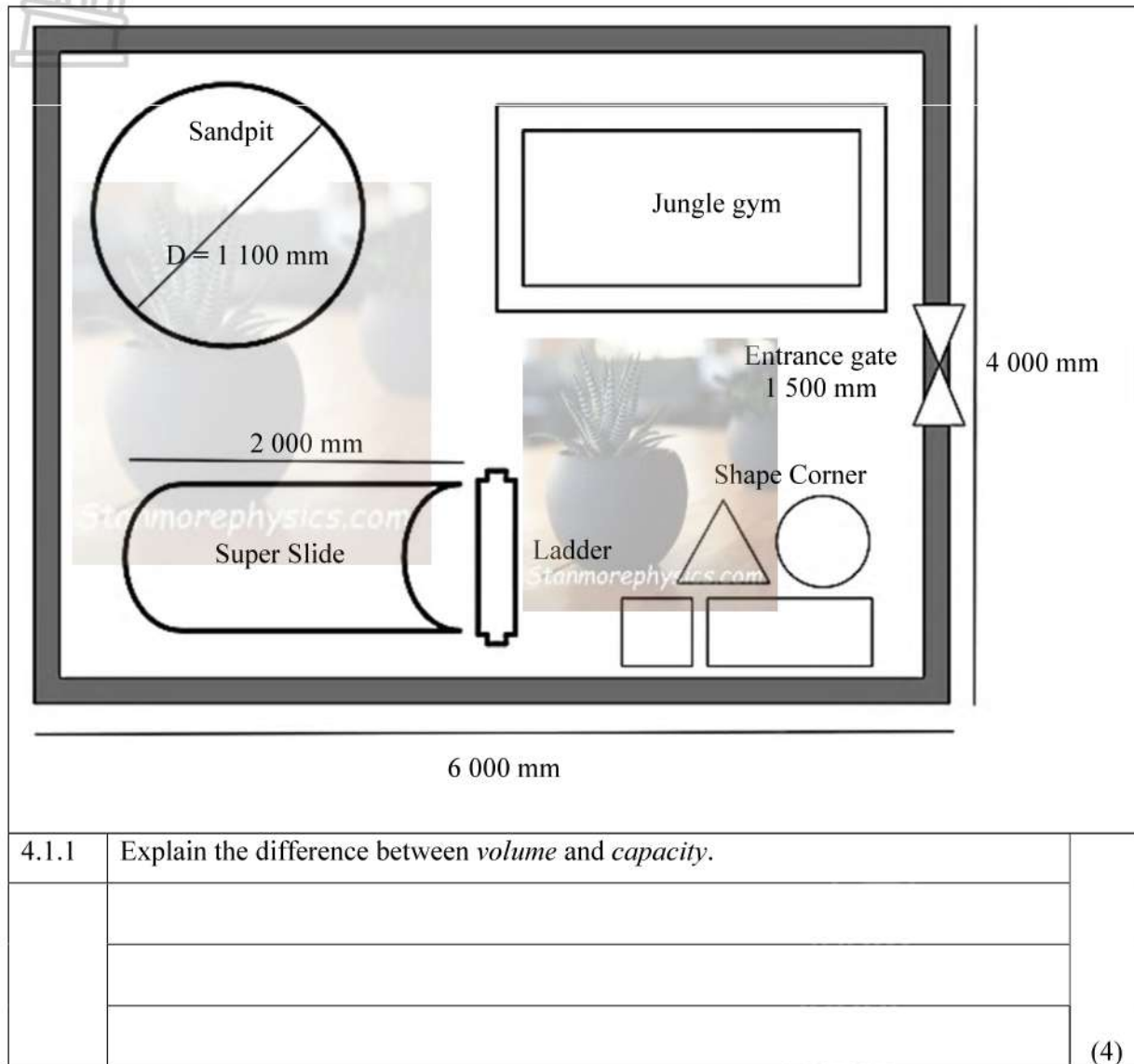
3.2.1	Determine the probability that, if a neighbouring country is randomly selected, it contains the letter 'z' in its name. Use all neighbouring countries, excluding Lesotho. Write down your answer as a fraction and a decimal.	
		(3)
3.2.2	Which province in South Africa has the smallest land area?	
		(2)

[31]

QUESTION 4

- 4.1 Julie owns a day-care centre. A plan of the day-care centre's playground is shown below. Julie wants to do some renovations on the playground.

Study the plan of the playground and answer the questions that follow.



4.1.2	The fence around the playground must have a security line (electric fencing) installed on top. The section above the entrance remains open and measures 1,5 m. Determine, in metres, the total length of the security line that is required around the playground.	
		(4)

4.1.3 Determine the height of the sand if the sandpit is filled to 80% of its capacity. The sandpit has a diameter of 1 100 mm and a height of 500 mm. Round-off your final answer to the nearest 2 decimal places.

You may use the following formula: **Volume** = $\pi \times$

(radius)² × height Use: $\pi = 3,142$



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(4)

4.2 The super slide is shaped like a cylinder (pipe) and must be painted.

4.2.1 Julie calculated that the total surface area that she needs to paint is 5 027,2 cm² because the radius is 4 cm. Verify, by showing ALL calculations whether Julie is correct.

You may use the following formula: **Surface Area = Circumference × height**

where the **Circumference = 2 × π × r** and the height is the length of the cylinder.

Use: **π = 3,142**



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(5)

4.2.2 The special paint that Julie uses has a spread rate of 0,5 m²/litre. Determine the total number of litres of paint that she needs to buy to give the super slide a double coat of paint.

Assume that the surface area to be painted is 5 027,2 cm².

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(4)

- R225 per litre paint
- R45 per paint brush x 2
- R30 per 2ℓ turpentine
- R250 labour

(4)

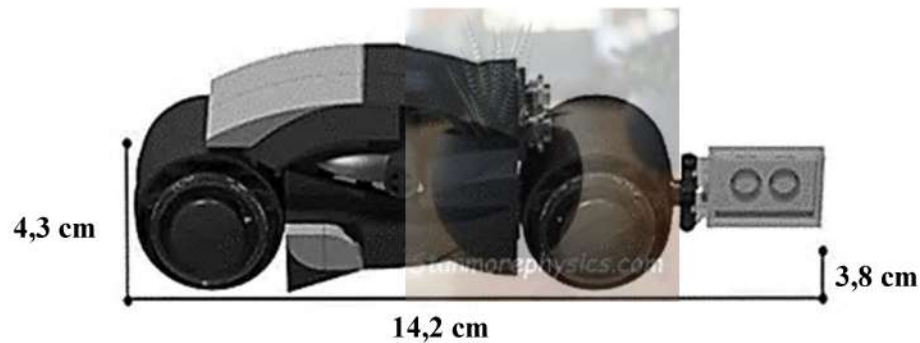
[25]

QUESTION 5

- 5.1 TRON is a science fiction movie. TRON: ARES was released in October 2025 and is about a sophisticated AI program that travels into the real world.



Below is a picture of the Lego block version of the bike used by Jared Leto's character in the movie. Study the information and answer the questions below.



[Source: www.amazon.co.za]

5.1.1	If the life-size TRON motorbike is 8,3 feet long and the Lego version is 14,2 cm long, show by calculation (rounded-off to the nearest ten) that the scale is 1 : 20. NOTE: 1 foot = 30,48 cm.	
		(3)

5.1.2	Using the scale of 1:20, determine the real-life seat height of the TRON motorbike. Assume that the seat is level with the height of the front tyre.	
		(3)

5.1.3	BMI is an indicator used to describe a person's body health status. Jared Leto weighs 86 kg and is 1,8 m tall.	
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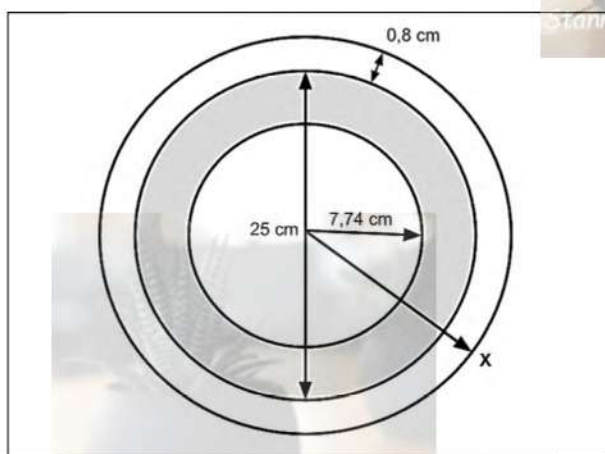
(a)	What does BMI stand for?	
		(2)

(b)	Determine Jared Leto's BMI in kg/m ² . Round-off your answer to the nearest whole number. You may use the following formula: $BMI = \frac{\text{weight (in kg)}}{\text{length (in m)}^2}$	
		(2)

- 5.2 In the TRON universe there is a circular disc used for data storage and identification. The outer layer has a sharp cutting edge that can be used as a weapon.

Below are the pictures and a diagram of the circular disc.

The disc has a hole in the middle. The radius of the inner circle is 7,74 cm, and the sharp edge is 0,8 cm wide all around.



[Source: *Tron.fandom.com*]

- 5.2.1 Determine the radius, labelled x , in the diagram above.

(3)

5.2.2 Determine the area of the shaded part. Write your answer in cm^2 .

You may use the following formula: **$\text{Area} = \pi r^2$**
where $\pi = 3,142$

(6)



5.2.3 The disc dimensions are as follow:

Thickness = 3 cm

Diameter = 26,2 cm

Determine how many discs can be packed lengthwise on top of one another in a box with the following dimensions.



(6)

- 5.3 When you are at the movies you have various snack options to choose from. Unfortunately, the cinema has run out of Whispers, iced tea and water.

**1 POPCORN**

+

1 Drink

CHOOSE

SLUSHIE OR COKE OR WATER OR
ICE TEA

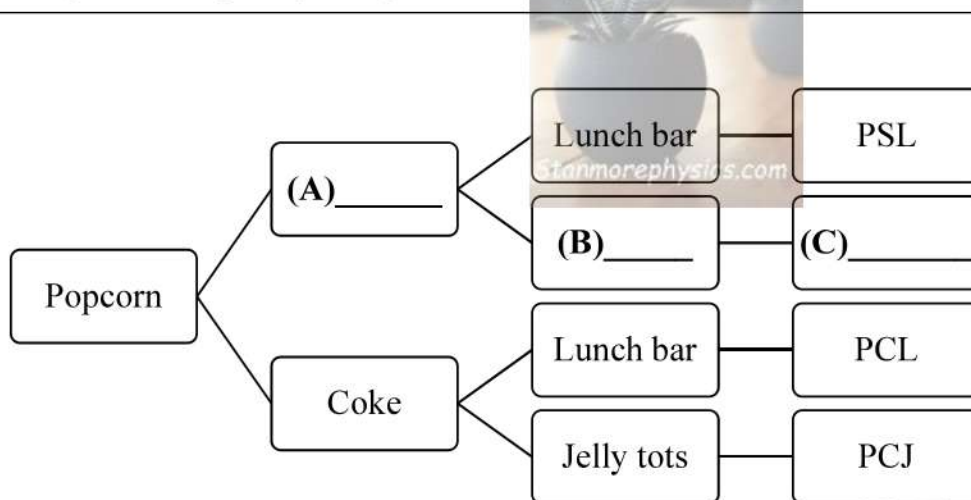
+

1 SWEET SNACK

CHOOSE

LUNCH BAR OR JELLY TOTS OR
WHISPERS

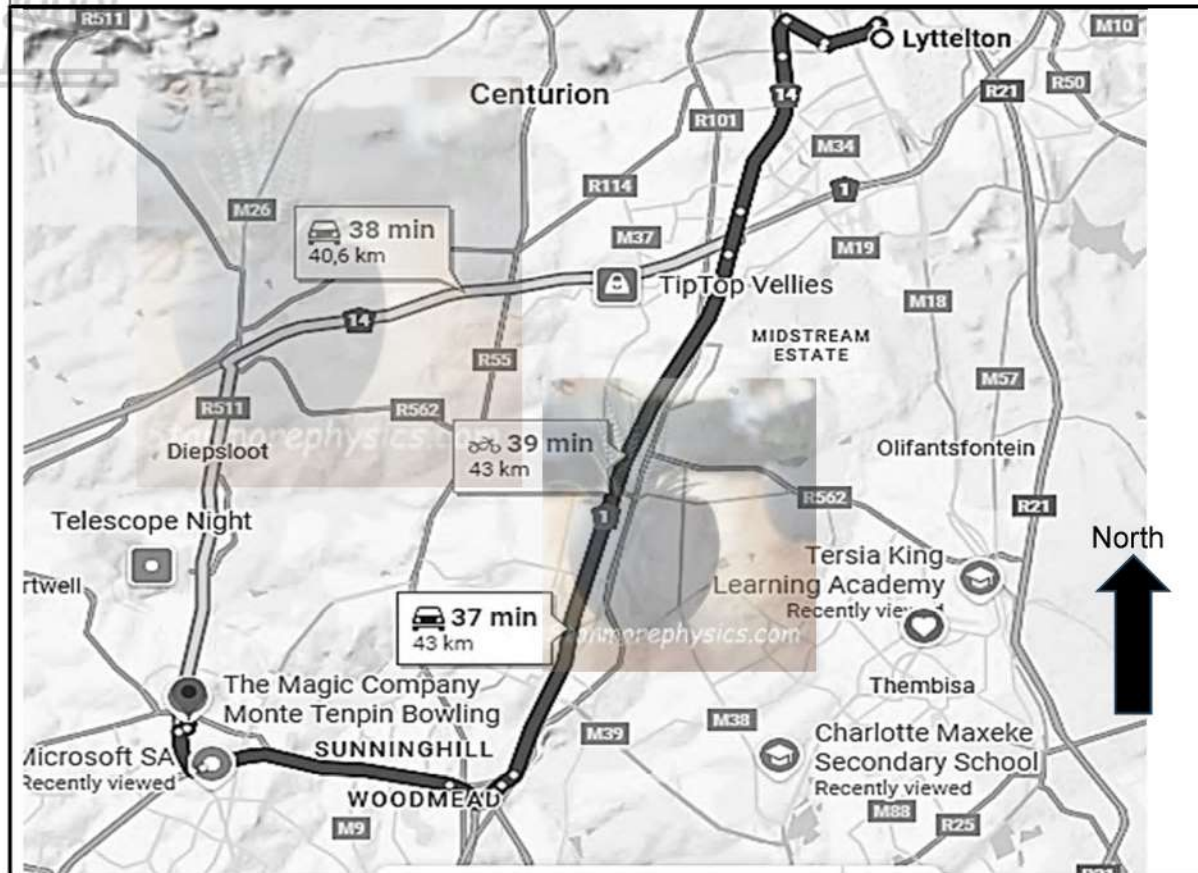
Complete the diagram by filling in names for (A), (B) and (C).



(3)

- 5.4 Denzel and Demetrio want to go and watch the TRON movie at Montecasino. They live in Lyttelton.

Study the map below and answer the questions that follow.



[Source: www.googlemaps.com]

- 5.4.1 Give a clear set of directions on how to travel from Lyttelton to Montecasino.

Pay attention to the following:

- Indicate the general direction of travel.
- Name the national or regional road used on the highlighted route.
- Indicate the correct turn-offs.

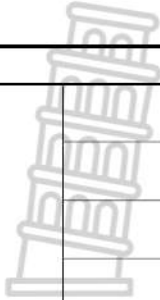
(3)

	5.4.2 Explain why you think Denzel and Demetrio will prefer to travel on a national road rather than on a regional road.	
		(2)

[33]



ADDITIONAL SPACE



ADDITIONAL SPACE



TOTAL: 150

END







PREPARATORY EXAMINATION

2026

MARKING GUIDELINES

MATHEMATICAL LITERACY (PAPER 2) (10602)

11 pages

CODES	EXPLANATION
MA	Method with accuracy
MCA	Method with consistent accuracy
CA	Consistent accuracy
A	Accuracy
C	Conversion
S	Simplification
RT	Reading from a table/graph/document/diagram
SF	Correct Substitution in a formula
O	Opinion/Explanation
P	Penalty e.g. for no unit, incorrect rounding off, etc.
NPR	No penalty for correct rounding off
NPU	No penalty for omitting unit, but wrong unit is penalised
AO	Answer Only

KEY TO TOPIC SYMBOLS:

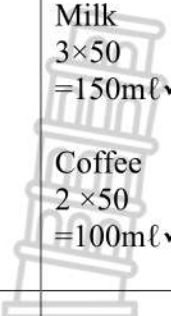
M = Measurement; MP = Maps, Plans and other representations; P = Probability

NOTES		
1.2.2	$60+55$ $=115\text{min} \checkmark \checkmark$	2 marks
1.3.3	$\frac{0}{13} \checkmark \checkmark$	2 marks
1.4.3	NNW $\checkmark \checkmark$	2 marks
2.1.5	$69'' \times 2,54$ $= \frac{175,26}{20} \checkmark \text{MCA}$ $=8,763 \text{ lights} \checkmark \text{CA}$ $=9 \text{ lights} \checkmark \text{R}$	3marks
2.2.1	$\frac{100\text{ml}}{R18} \checkmark \text{MA}$ $= 5,56 \text{ ml/R} \checkmark \text{A}$ $\frac{250\text{ml}}{R30} \checkmark \text{MA}$ $= 8,33 \text{ ml/R} \checkmark \text{A}$ Michelle's statement is correct $\checkmark \text{J}$	5 marks
4.1.3	Radius=500mm $V = \pi \times 550^2 \times 500 \checkmark \text{MA}$ $= 475\,227\,500 \text{ mm}^3$ $80\% = 0,8 \times 475\,227\,500 \text{ mm}^3 \checkmark \text{A}$ $= 380\,182\,000 \text{ mm}^3$ $= \frac{380\,182\,000 \text{ mm}^3}{\pi \times 550^2} \checkmark \text{MCA}$ $= 400\text{mm}$ $= 0,4\text{m} \checkmark \text{A}$ OR $\checkmark \text{A}$ $500 \times 80\% \checkmark \text{MA}$ $\frac{400\text{mm}}{1000} \checkmark \text{C}$ $= 0,4\text{m} \checkmark \text{A}$	4 marks

QUESTION 1 Answer Only: Full Marks				
	Explanation	Awarding of marks	Marks	T&L
1.1.1	$\frac{300}{1000} \checkmark C$ $= 0,3 \checkmark A$	1C conversion of ml to litres 1A answer NPU	(2)	M L1 E
1.1.2	Radius = $\frac{8}{2} \checkmark MA$ $= 4\text{cm} \checkmark A$	1MA dividing diameter by 2 1A answer NPU	(2)	M L1 E
1.1.3	C $\checkmark \checkmark A$	2A answer (Accept afternoon)	(2)	M L1 E
1.2.1	$= 5\,740\text{ km} - 64,33\text{ km} \checkmark MA$ $= 5\,675,67\text{ km} \checkmark A$	1MA subtracting correct values 1A answer	(2)	M L1 E
*1.2.2	1:55:00 $\checkmark \checkmark A$	2A rounding the time to nearest 5 minutes (Accept 1: 55)	(2)	M L1 E
1.2.3	$= 28,2 \times 1\,000 \checkmark C$ $= 28\,200\text{ m} \checkmark A$	1C km to m 1A answer NPU	(2)	M L1 E
1.3.1	A4 $\checkmark \checkmark A$	2A correct grid reference (Accept 4A)	(2)	MP L1 E
1.3.2	Durban $\checkmark \checkmark A$	2A correct holiday destination	(2)	MP L1 E
*1.3.3	Zero/0/Impossible $\checkmark \checkmark A$	2A correct answer	(2)	P L1 E
1.4.1	B $\checkmark \checkmark A$	2A identifying correct map	(2)	MP L1 E

1.4.2	M7 ✓✓A	2A identifying correct metropolitan road	(2)	MP L1 E
*1.4.3	North West ✓✓A	2A correct general direction	(2)	MP L1 E
1.4.4	B ✓✓A	2 A correct answer	(2)	MP L1 M
1.4.5	True ✓✓A	2A identifying that the scale is a number scale	(2)	MP L1 E
1.4.6	Every unit on the map represents 200 000 units in reality. ✓✓A	2A Explanation of scale	(2)	MP L1 E
			[30]	
QUESTION 2				
2.1.1	Total length around the outside boundary of the combi ✓✓A <i>(Accept any sensible/logical answer)</i>	2A correct explanation	(2)	MP L1 M
2.1.2	$= 173 \times 2,54$ ✓C $= 439,42$ cm ✓A	1C converting using the conversion factor 1A answer	(2)	M L2 E
2.1.3	$69 \times 2,54 = 175,26$ cm ✓C $19 \times 2,54 = 48,26$ cm $= 175,26 + 48,26$ ✓M $= 223,52$ cm ✓CA OR $= 69'' + 19''$ ✓M $= 88''$ $\therefore 88' \times 2,54$ cm ✓C $= 223,52$ cm ✓CA	1C converting both values 1C adding the correct values 1CA answer in cm OR 1A Adding correct values in inches 1C Converting both values 1CA Answer in cm NPR	(3)	M L 2 M

2.1.4	$A = \text{length} \times \text{width}$ $= 439,42 \times 223,52$ $\checkmark C \quad \checkmark SF$ $= 4,3942 \times (2,2352 + 2) \checkmark M$ $= 4,3942 \times 4,2352 \checkmark MCA$ $= 18,61 \checkmark CA$ $\approx 20 \text{ m}^2 \checkmark R$ OR $\checkmark C \quad \checkmark SF$ $= 439,42 \times (223,52 + 200) \checkmark M$ $= 439,42 \times 423,52 \checkmark MCA$ $= 186\,145,51$ $\therefore \frac{186\,146,51}{(100)^2}$ $= 18,61 \checkmark CA$ $\approx 20 \text{ m}^2 \checkmark R$	CA from Q2.1.2 and Q2.1.3 1SF substitution 1C converting cm to m 1M adding 2m 1MCA multiplying correct values 1CA answer 1R rounding to nearest ten OR 1SF substitution 1M adding 200 cm 1MCA multiplying correct values in cm 1C converting to m 1CA answer 1R rounding to nearest ten NPU	(6)	M L3 M
*2.1.5	$\frac{439,42}{20} \checkmark MCA$ $= 21,971 \text{ lights} \checkmark CA$ $= 22 \text{ lights} \checkmark R$	CA from Q2.1.2 1MCA using total length in cm dividing 20 cm 1CA answer 1R rounding up	(3)	M L2 E
*2.2.1	$\frac{R18}{100} \checkmark MA$ $= 0,18 \text{ per ml} \checkmark A$ $\frac{R30}{250 \text{ ml}} \checkmark MA$ $= 0,12 \text{ per ml} \checkmark A$ Michelle's statement is correct $\checkmark J$	1 MA calculating cost per ml in 100 ml cup 1A answer 1MA calculating cost per ml in 250 ml cup 1A answer 1O conclusion	(5)	M L4 E
2.2.2	$3 + 2 = 5 \checkmark A$ Milk $\frac{3}{5} \times 250 \checkmark MA$ $= 150 \text{ ml} \checkmark A$ Coffee $\frac{2}{5} \times 250$ $= 100 \text{ ml} \checkmark A$ OR $\frac{250}{5} \checkmark MA$ $= 50 \text{ ml}$	1A calculating 5 parts 1MA correct fraction multiplied by 250 1A answer of milk in ml 1A answer of coffee in ml OR 1A 5 parts 1MA for dividing 250 with the 5 parts	(4)	L2 M D

	 Milk 3×50 $= 150 \text{ ml} \checkmark \text{ A}$ Coffee 2×50 $= 100 \text{ ml} \checkmark \text{ A}$	1A answer of milk in ml		
		1A answer of coffee in ml		
2.3.1	Floor plan $\checkmark \checkmark \text{ A}$	2A identifying type of plan	(2)	MP L1

2.3.2	Students sometimes have different class times and might pop in for coffee alone. $\checkmark \text{ O}$ Students might want to stand while drinking coffee because of time constraints. $\checkmark \text{ O}$ <i>(Accept any relevant/logical answer)</i>	1O reason one 1O reason two	(2)	MP L4
2.3.3	It is a design plan indicating the design of the coffee shop and not a floor plan. $\checkmark \checkmark \text{ O}$	2O identifying it is a design plan that does not show detail like a floor plan	(2)	MP L1
			[31]	

QUESTION 3

3.1.1	$\frac{80}{100} \checkmark \text{ C}$ $= 0,8 \text{ m} \checkmark \text{ A}$	1C dividing by 100 1A answer NPU	(2)	M L1 E
3.1.2	$5 + 3 + 2 = 10 \checkmark \text{ A}$ Window 3 $= 0,5 \times 10 \times 5 \checkmark \text{ SF}$ $= 25 \text{ m}^2$ $34\% \times 25 \checkmark \text{ MCA}$ $= 8,5 \text{ m}^2 \checkmark \text{ CA}$ Window 2 $= 2,1 \times 1,2$ $= 2,52 \text{ m}^2 \checkmark \text{ A}$ Window 1 $= 2,1 \times 0,8$ $= 1,68 \text{ m}^2 \checkmark \text{ A}$ Total: $= 1,68 + 2,52 + 8,5 \checkmark \text{ MCA}$ $= 12,7 \text{ m}^2 \checkmark \text{ CA}$	1A calculating the total base of the triangle 1SF substituting in formula 1MCA calculating 34% of the area to get area of window 3 1CA Answer 1A area of window 2 1A area of window 1 1MCA adding areas of all the windows 1CA answer	(8)	M L3 D

3.1.3				
(a)	It means that it will cost R720 per square metre of tinting. ✓✓A	2A explanation	(2)	M L1 M
(b)	$12,7 \approx 13 \text{ m}^2$ ✓R $= 13 \times \text{R}720$ ✓M $= \text{R}9\,360$ ✓CA	CA from Q3.1.2 1R rounding up the answer to the next whole square metres 1M multiplying with R720 1CA answer	(3)	M L2 E
3.1.4	For privacy ✓✓O (Accept any sensible/logical answer)	2O reason	(2)	M L4 E
3.1.5	South ✓✓A	2A general direction	(2)	MP L2 E
3.1.6	28 mm : 14 m $\frac{28}{28} : \frac{14\,000}{28}$ ✓C ✓A 1 : 500 ✓A	1C conversion 1A correct ratio 1A writing as a ratio	(3)	MP L2 M
3.1.7	1cm : 5 m ✓✓A 1 : 500 ✓✓C	CA from Q3.1.6 2A writing as a ratio cm:m 2C converting to the same unit	(4)	MP L2 M
3.2.1	$\frac{3}{5}$ ✓A $= 0,6$ ✓CA	1A numerator 1A denominator 1CA as a decimal	(3)	MP L2 E
3.2.2	Gauteng/GP ✓✓A	2A identifying the correct province	(2)	MP L1 E
			[31]	

QUESTION 4				
4.1.1	Volume is the amount of space an object occupies or the amount of substance currently in a container. ✓✓A Capacity is the total amount of liquid or substance that a container or object can occupy. A✓✓	2A for explaining volume 2A for explaining capacity	(4)	M L2 E
4.1.2	Total length = 6 m + 4 m + 6 m + 4 m ✓C = 20 m ✓A = 20 m – 1,5 m ✓MCA = 18,5 m ✓CA	1C converting lengths to m 1A answer 1MCA subtracting 1,5 from total length 1 CA answer	(4)	MP L3 M
*4.1.3	$V = 3,142 \times 0,55^2 \times 0,5$ ✓MA = 0,4752275 m³ ✓A = 0,8 × 0,4752275 ✓MCA (0,8 or 80% or 80/100) = 0,380182 m³ ≈ 0,38 m³ ✓R	1 MA substituting correct values in m into formula 1A answer 1MCA calculating 80% of the volume 1R rounding to 2 decimal places	(4)	M L2 E
4.2.1	$SA = 2\pi r \times h$ 5 027,2 = 2 × 3,142 × r × 200 ✓SF✓MA 5 027,2 = 1 256 × r ✓S $\frac{5\,027,2}{1\,256} = r$ ✓MCA 4 cm = r Yes, Julie is correct. ✓J	1SF substituting in formula 1MA manipulating formula to calculate r 1 S simplification 1O opinion NPU	(5)	M L4 E
4.2.2	$\frac{10054,4\text{cm}^2}{10\,000}$ ✓C = $\frac{1,00544\text{m}^2}{0,5\text{m}^2}$ ✓MA = 2,01088 ℓ ✓CA Therefore 3 ℓ of paint. ✓R OR $5027,2\text{cm}^2 \times 2$ ✓MA = 10054,4cm² = $\frac{10054,4}{10\,000}$ ✓C = $\frac{1,00544\text{m}^2}{0,5\text{m}^2}$ ✓MCA = 2,01088ℓ Therefore 3 ℓ of paint ✓R	1C dividing by 10 000 1MCA dividing with the spread rate 1A answer 1R rounding up to the next whole number OR 1MA Multiply by 2 1C dividing by 10 000 1MCA dividing with the spread rate 1R rounding up to the next whole number.	(4)	M L3 M

4.2.3	$(3 \times 225) \checkmark \text{MA} + (45 \times 2) \checkmark \text{MA} + 30 + 250 \checkmark \text{S}$ $= \text{R}1\,045 \checkmark \text{CA}$	CA from 4.2.2 1MA multiplying 225 by 3 1MA multiplying 45 by 2 1S simplification 1CA answer	(4)	M L3 E
			[25]	



QUESTION 5				
5.1.1	$= 8,3 \times 30,48$ $= 252,984 \text{ cm} \checkmark \text{C}$ $14,2 : 252,984 \checkmark \text{M}$ $1 : 17,81577465... \checkmark \text{CA}$ Rounding to 20 $1 : 20$	1 C conversion to cm 1 M writing as a unit ratio 1CA answer	(3)	M L2 M
5.1.2	$4,3 \times 20 \checkmark \text{MA}$ 86 cm $\frac{86}{100} \checkmark \text{C}$ $= 0,86 \text{ m} \checkmark \text{CA}$	1MA multiplying with the scale 1 C conversion to m 1CA answer	(3)	M L3 E
5.1.3	(a) Body Mass Index $\checkmark \checkmark \text{A}$	2A writing BMI out in full	(2)	M L1 E
	(b) $\text{BMI} = \frac{86}{1,8^2} \checkmark \text{SF}$ $= 26,54 \text{ kg/m}^2$ $= 27 \text{ kg/m}^2 \checkmark \text{R}$	1SF substituting correctly in formula 1R rounded-off answer	(2)	M L2 E
5.2.1	$\frac{25}{2} \checkmark \text{MA}$ $12,5 + 0,8 \checkmark \text{MA}$ $= 13,3 \text{ cm} \checkmark \text{A}$	1MA calculating the radius 1MA adding 0,8 1A answer	(3)	M L2 M
5.2.2	Area of the circle from middle to the shaded edge $A = 3,142 \times 12,5^2 \checkmark \text{SF}$ $= 490,9375 \text{ cm}^2 \checkmark \text{A}$ Area of the inner circle $A = 3,142 \times 7,74^2 \checkmark \text{SF}$ $= 188,2296792 \checkmark \text{A}$ Total area $= 490,9375 - 188,2296792 \checkmark \text{MCA}$ $= 302,707 \text{ cm}^2 \checkmark \text{CA}$	1SF substituting in formula 1A answer 1SF substituting in formula 1A answer 1MCA subtracting above values 1CA answer NPR	(6)	M L3 D

5.2.3	Widthwise $\frac{55}{26,2} = 2,0992 \checkmark \text{MA}$ $= 2 \text{ discs } \checkmark \text{A}$ Lengthwise $\frac{80}{26,2} = 3,0534$ $= 3 \text{ discs } \checkmark \text{A}$ Heightwise $\frac{60}{3} = 20 \text{ discs } \checkmark \text{A}$ Total number of discs $= 2 \times 3 \times 20 \checkmark \text{MCA}$ $= 120 \text{ discs } \checkmark \text{CA}$	1MA dividing the width of the box with the diameter of disc 1A answer 1A answer 1A answer 1 MCA multiplying the above answers 1CA answer	(6)	M L2 D
5.3		1A for each correct outcome listed	(3)	P L2 E
5.4.1	Travel in South/South westerly ✓A direction form Lyttleton on the N14 and N1. ✓A When you reach Woodmead, turn right on R511 ✓A untill you get to Microsoft SA. Turn right again and you will find Montecasino.	1A indicating general direction 1A indicating National roads you will be traveling on 1A turn off/R511 you will travel on	(3)	MP L4 E
5.4.2	Less Traffic ✓✓A OR Safer ✓✓A <i>(Accept any sensible/logical answer)</i>	20 correct reason	(2)	MP L4
			[33]	

TOTAL: 150

COGNITIVE LEVELS



Question number	Level 1	Level 2	Level 3	Level 4
1.1.1	2M			
1.1.2	2M			
1.1.3	2M			
1.1.4	2M			
1.2.1	2M			
1.2.2	2M			
1.2.3	2M			
1.3.1	2MP			
1.3.2	2MP			
1.3.3	2P			
1.4.1	2MP			
1.4.2	2MP			
1.4.3	2MP			
1.4.4	2MP			
1.4.5	2MP			
2.1.1	2MP			
2.1.2		2M		
2.1.3		3M		
2.1.4			6M	
2.1.5		3M		
2.2.1				5MP
2.2.2		4M		
2.3.1	2MP			
2.3.2				2MP
2.3.3	2MP			
3.1.1	2M			
3.1.2			8M	
3.1.3A	2M			
3.1.3B		3M		
3.1.4				2M
3.1.5		2MP		
3.1.6		3MP		
3.1.7		4MP		
3.2.1		3P		
3.2.2	2MP			
4.1.1		4M		
4.1.2			4MP	
4.1.3		4M		
4.2.1				5M
4.2.2			4M	
4.2.3			4M	
5.1.1		3M		
5.1.2			3M	
5.1.3A	2M			
5.1.3B		2M		
5.2.1			6M	
5.2.2		3M		
5.2.3		6M		




5.3		3P		
5.4.1				3MP
5.4.2				2MP
Actual total	44	49	35	22
Actual %	29%	33%	23%	15%
TOTAL ACCORDING TO POLICY	30%	30%	20%	20%
Variance	-1	+3	+3	-5

Topics

	Measurement	Maps and Plans	Probability
Total	91	51	8
Percentage	61%	34%	5%
Expected according to policy	55%	40%	5%

