GAUTENG PROVINCE

PREPARATORY EXAMINATION
2026

NAME OF SCHOOL											
CANDIDATE'S NAME											
DATE					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.

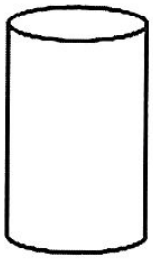
QUESTION 1

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



Diagram of ONE can:



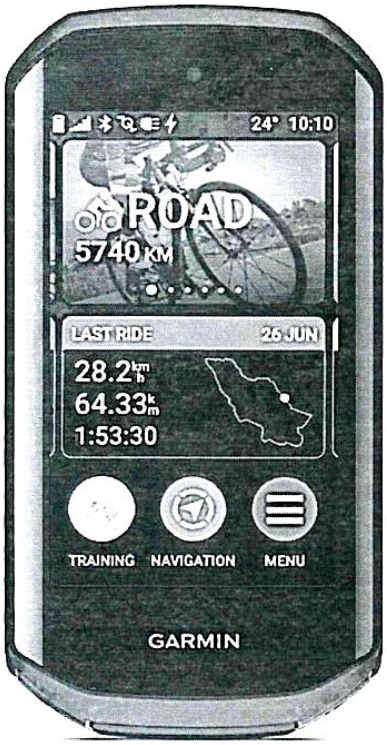
Diameter = 8 cm
Height = 12 cm

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

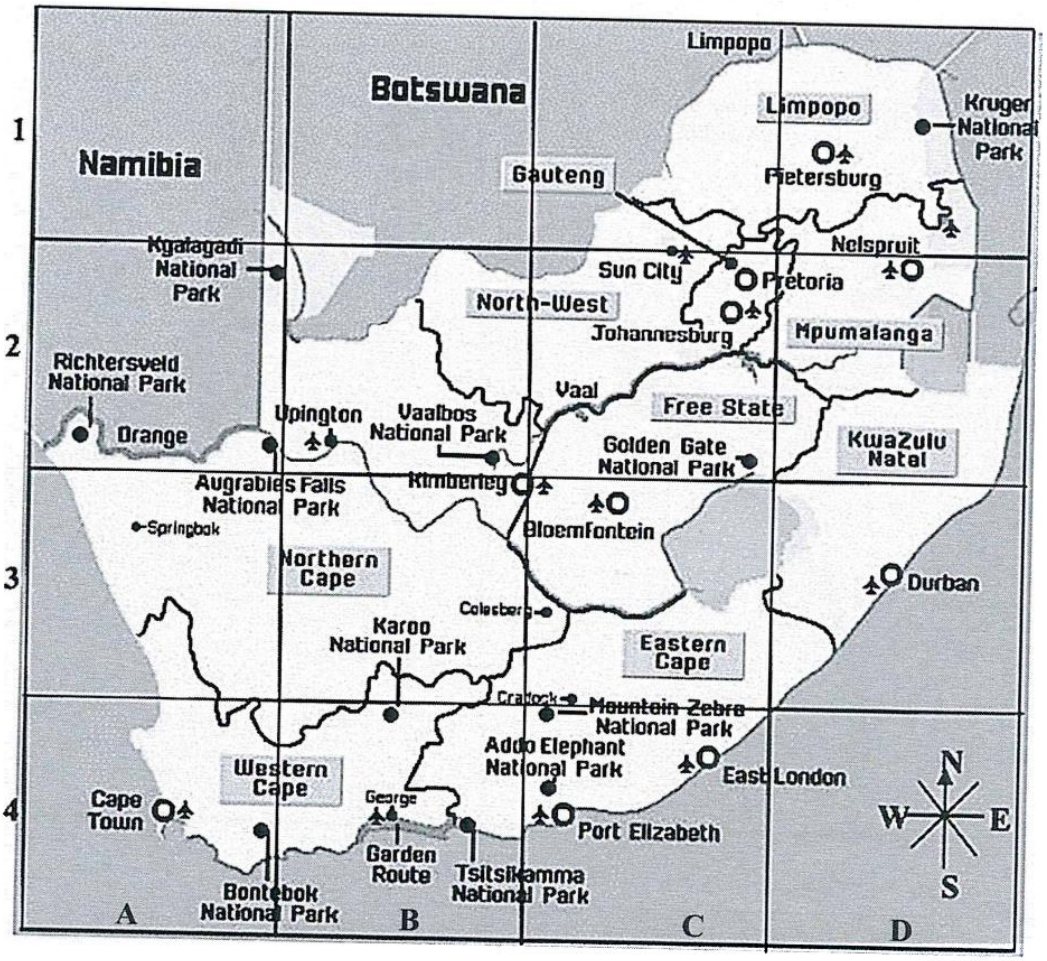
Last ride on 26 June 2026
28,2 km/h
Total distance 64,33 km
Time: 1:53:30

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.



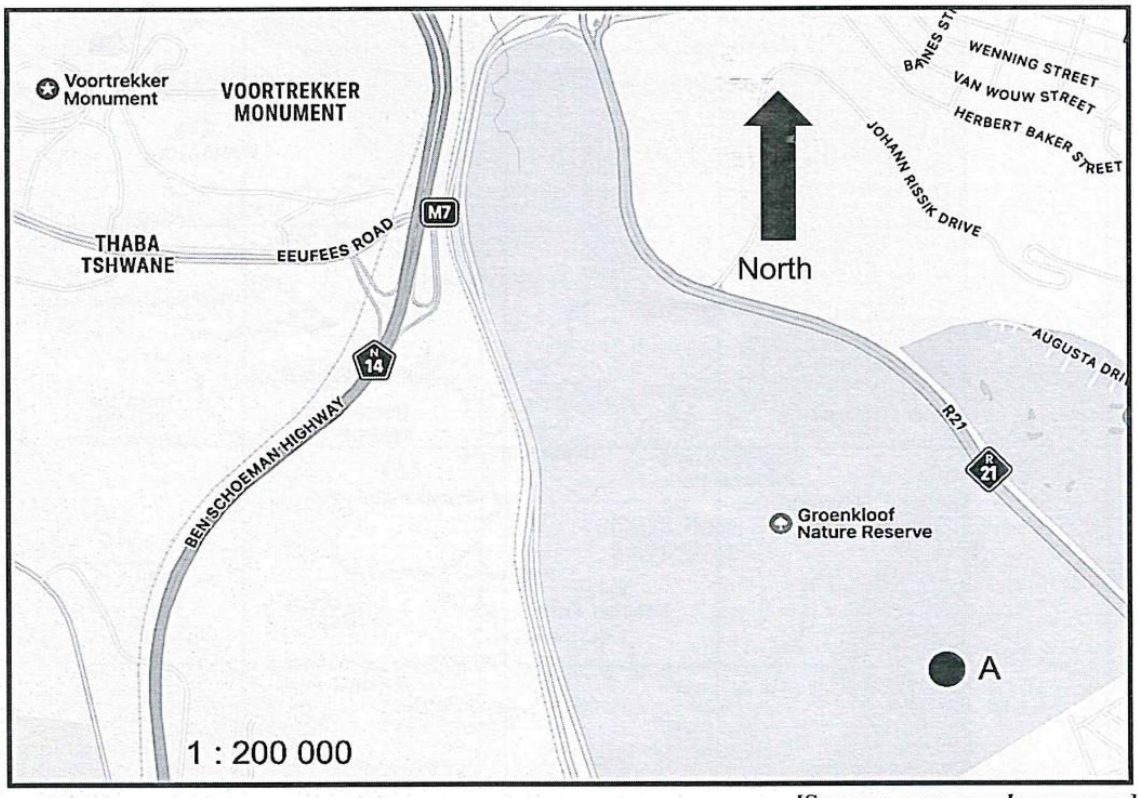
[Source: *www.safaribookings.co.za*]

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)

1.4 A part of a map is given below. Study the map and answer the questions that follow.



[Source: *www.googlemaps.com*]

1.4.1	Identify the type of map given above by choosing the correct letter. Write the answer (A – C) in the block provided. A Street map B Road map C Layout map	(2)

1.4.2	Identify the name of the Metropolitan (M) road on the map.	
		(2)

1.4.3	In which general direction is the Voortrekker Monument from point **A**?	
		(2)

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"

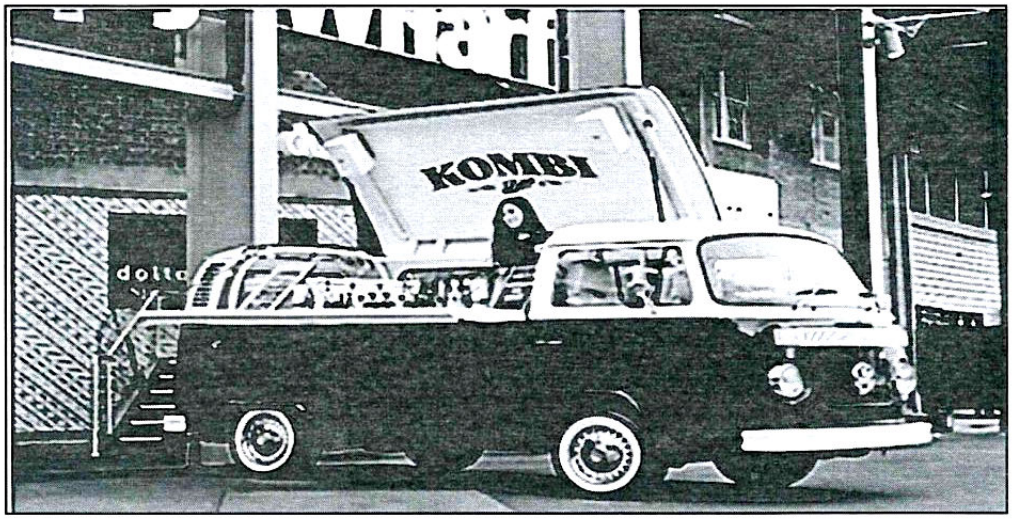
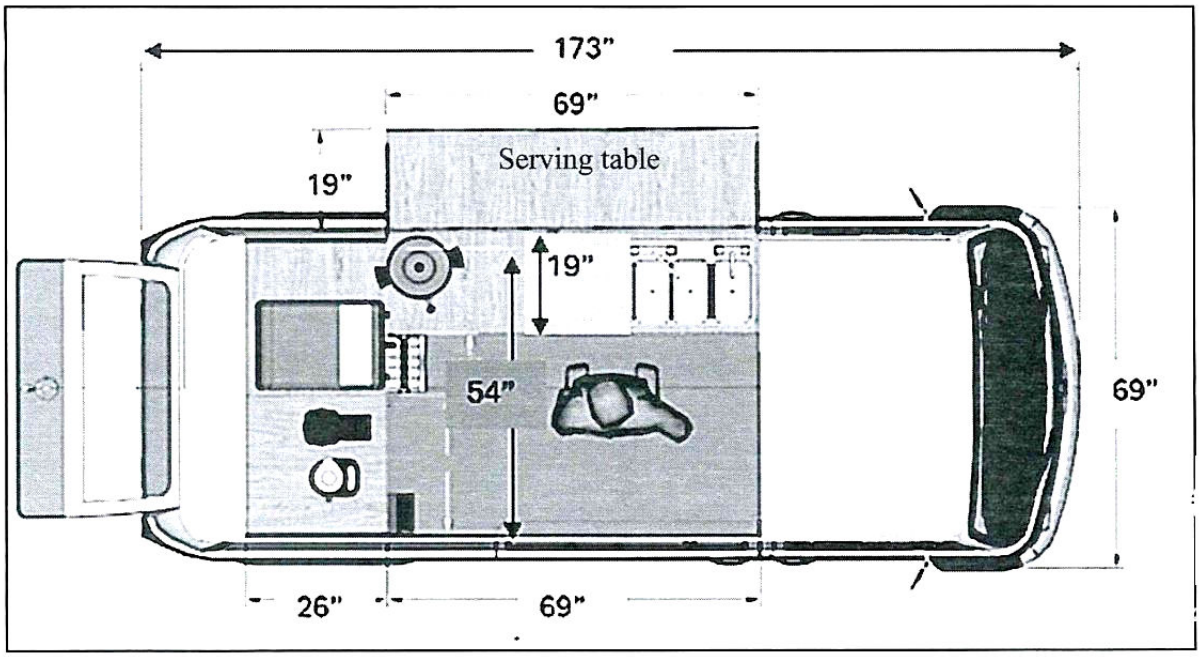


Diagram 2: Top view of the "Coffee Kombi"



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

2.1.1	Explain what is meant by *the perimeter of the kombi.*	
		(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.

250 mℓ 

100 mℓ

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**

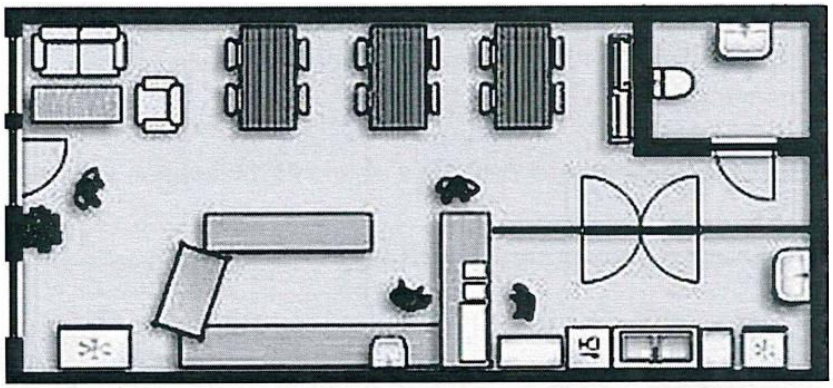
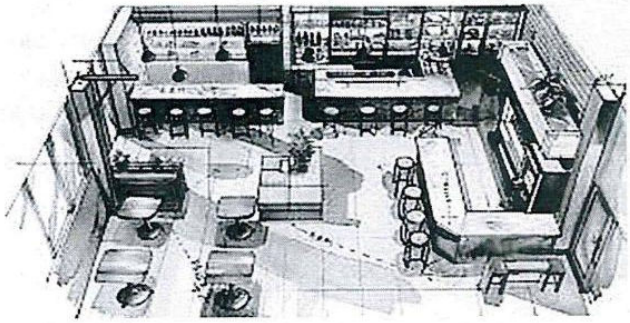


Diagram 2: Design of the upgraded coffee shop



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)

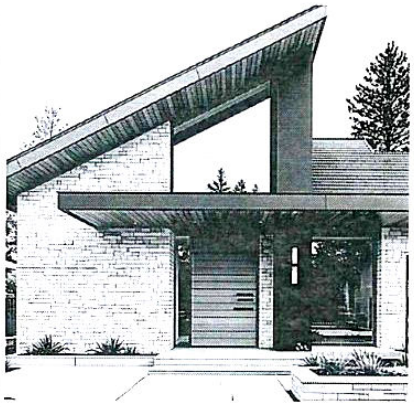
2.3.3	The plan in diagram 2 does not indicate any doors or toilets. Provide ONE reason why you think it does not indicate any details of the inside of the shop.	
		(2)

[31]

QUESTION 3

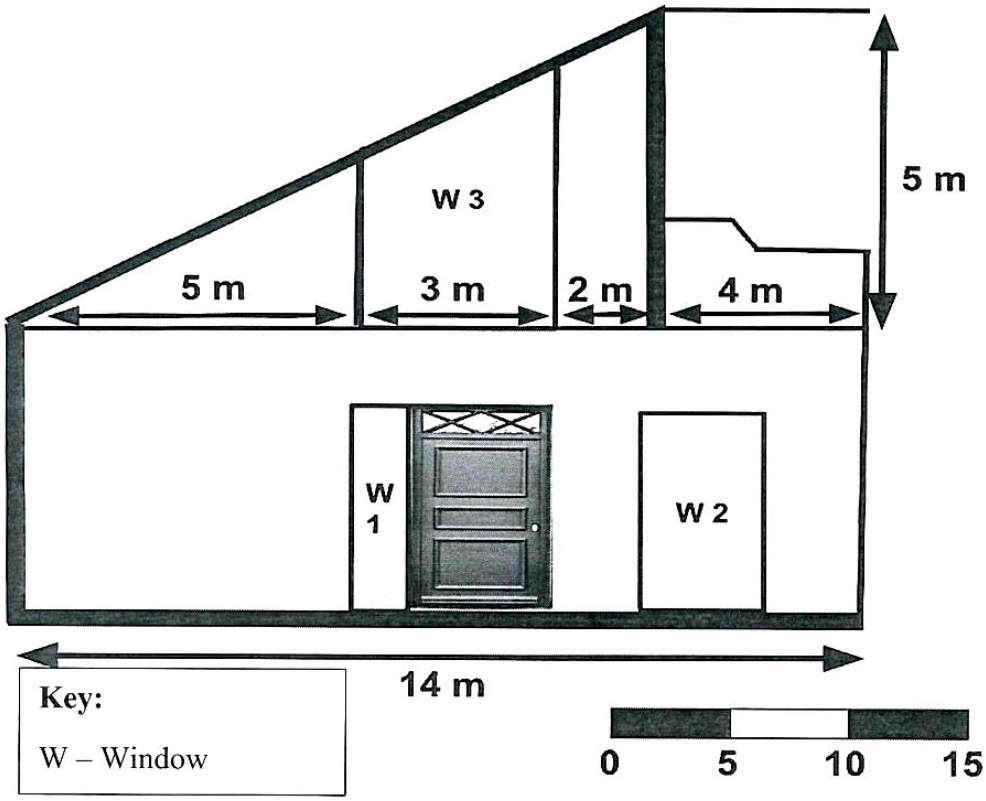
3.1 Lil Jon, the Grammy-winning producer and rapper, hosts the HGTV series *Lil Jon Wants to Do What?*, in which he works with a designer to convince homeowners to take bold, unconventional approaches to their home renovations.

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



There is a long window to the left of the front door, (W 1), a big window on the right-hand side of the door (W 2) and there is a window on the top floor which is inside a wall which makes a triangle with the roof. (W 3)

- **W 1 has dimensions 2,1 m x 80 cm**
- **W 2 has dimensions 2,1 m x 1,2 m**
- **W 3 is 34% of the total wall (triangle) on the top floor.**



Key:

W – Window

[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 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 × width** Window 3: **Area = 0,5 × base × 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)

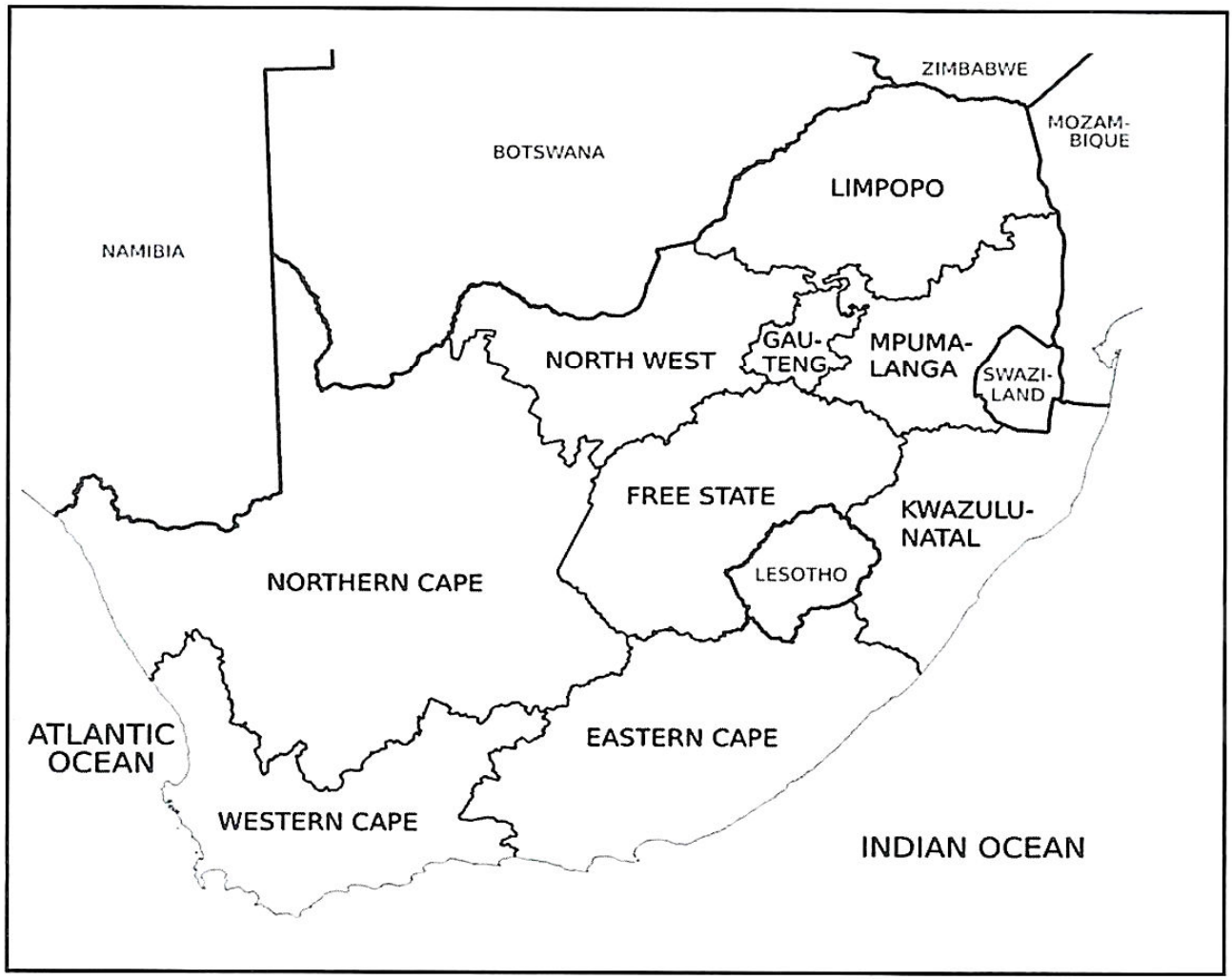
3.1.5	The house is north-facing, and Lil Jon is facing the house. In which general direction is Lil Jon facing?	
		(2)

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)

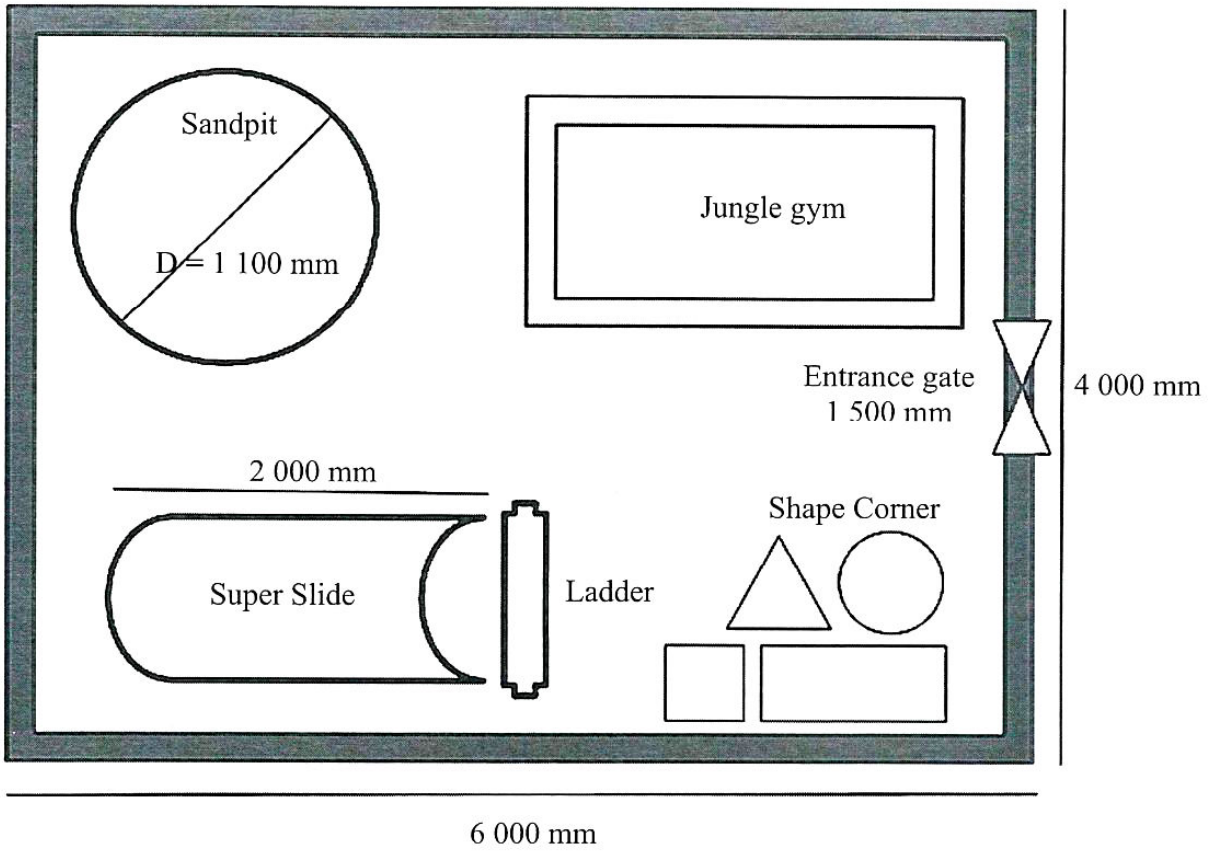
3.2.2	Which province in South Africa has the smallest land area?	(2)

[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.



4.1.1	Explain the difference between *volume* and *capacity*.	
		(4)

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** = π × $(radius)^2$ × **height** Use: $\pi = 3,142$	
		(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 x π x r** and the height is the length of the cylinder. Use: $\boldsymbol{\pi = 3,142}$	
		(5)

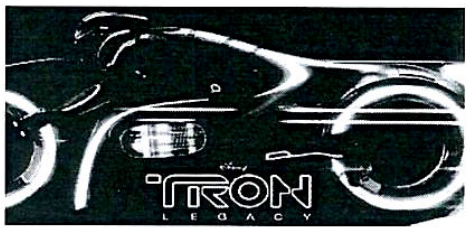
4.2.2	The special paint that Julie uses has a spread rate of 0,5 m²/litre. Determine the total number of litres of paint that she needs to buy to give the super slide a double coat of paint. Assume that the surface area to be painted is 5 027,2 cm².	
		(4)

4.2.3	Hence, determine the total cost of the paint job if the expenses are as follow: • R225 per litre paint • R45 per paint brush x 2 • R30 per 2ℓ turpentine • R250 labour	
		(4)

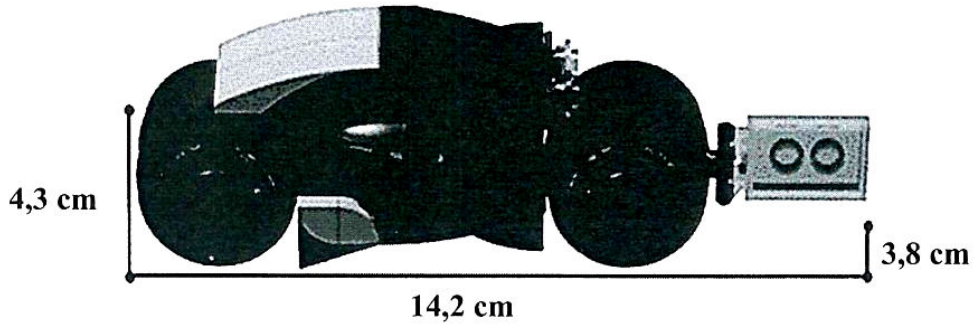
[25]

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.	

	(a) What does BMI stand for?	
		(2)

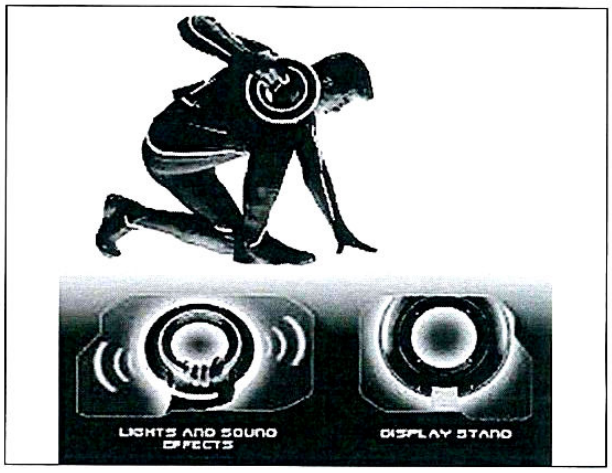
	(b) Determine Jared Leto's BMI in kg/m^2. Round-off your answer to the nearest whole number. You may use the following formula: $\boldsymbol{BMI = \frac{weight\ (in\ kg)}{length\ (in\ m\ )^2}}$	
		(2)

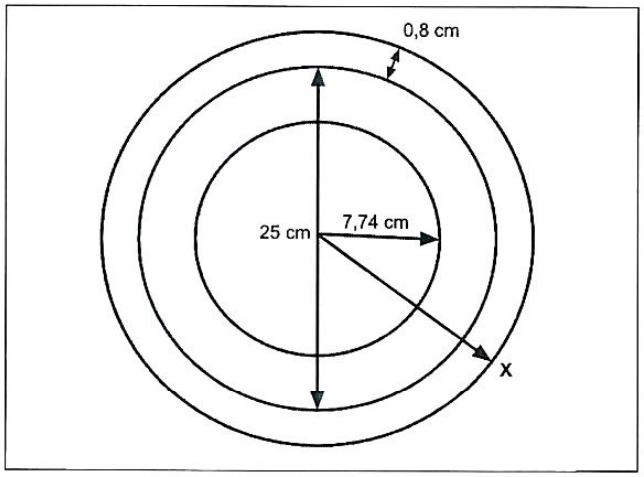
5.2 In the TRON universe there is a circular disc used for data storage and identification. The outer layer has a sharp cutting edge that can be used as a weapon.

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.



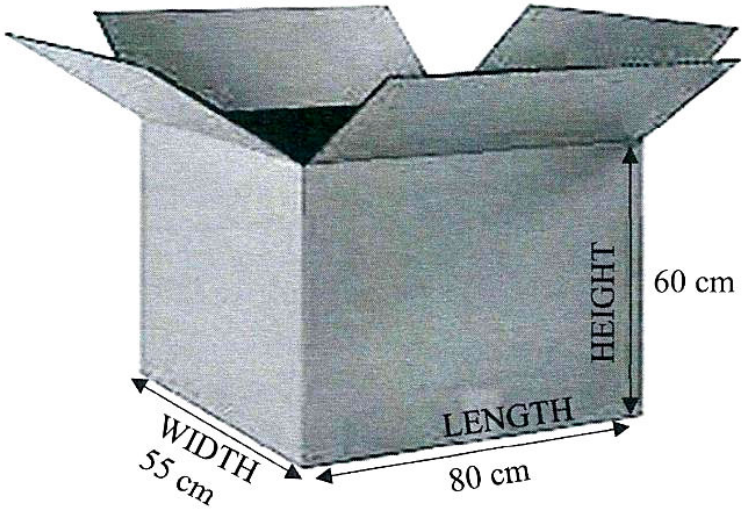




[Source: *Tron.fandom.com*]

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: $\boldsymbol{Area = \pi r^2}$ $\boldsymbol{where\ \pi = 3{,}142}$	
		(6)

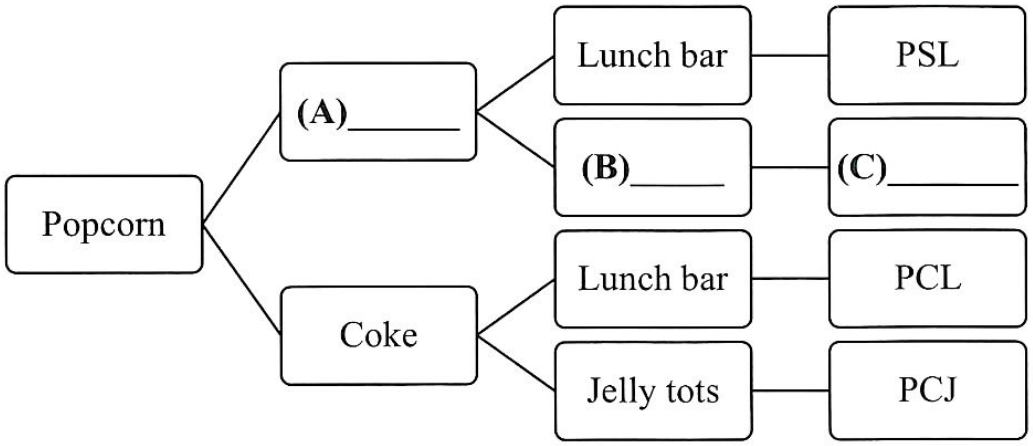
5.2.3	The disc dimensions are as follow: **Thickness = 3 cm** **Diameter = 26,2 cm** Determine how many discs can be packed lengthwise on top of one another in a box with the following dimensions.  	
		(6)

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

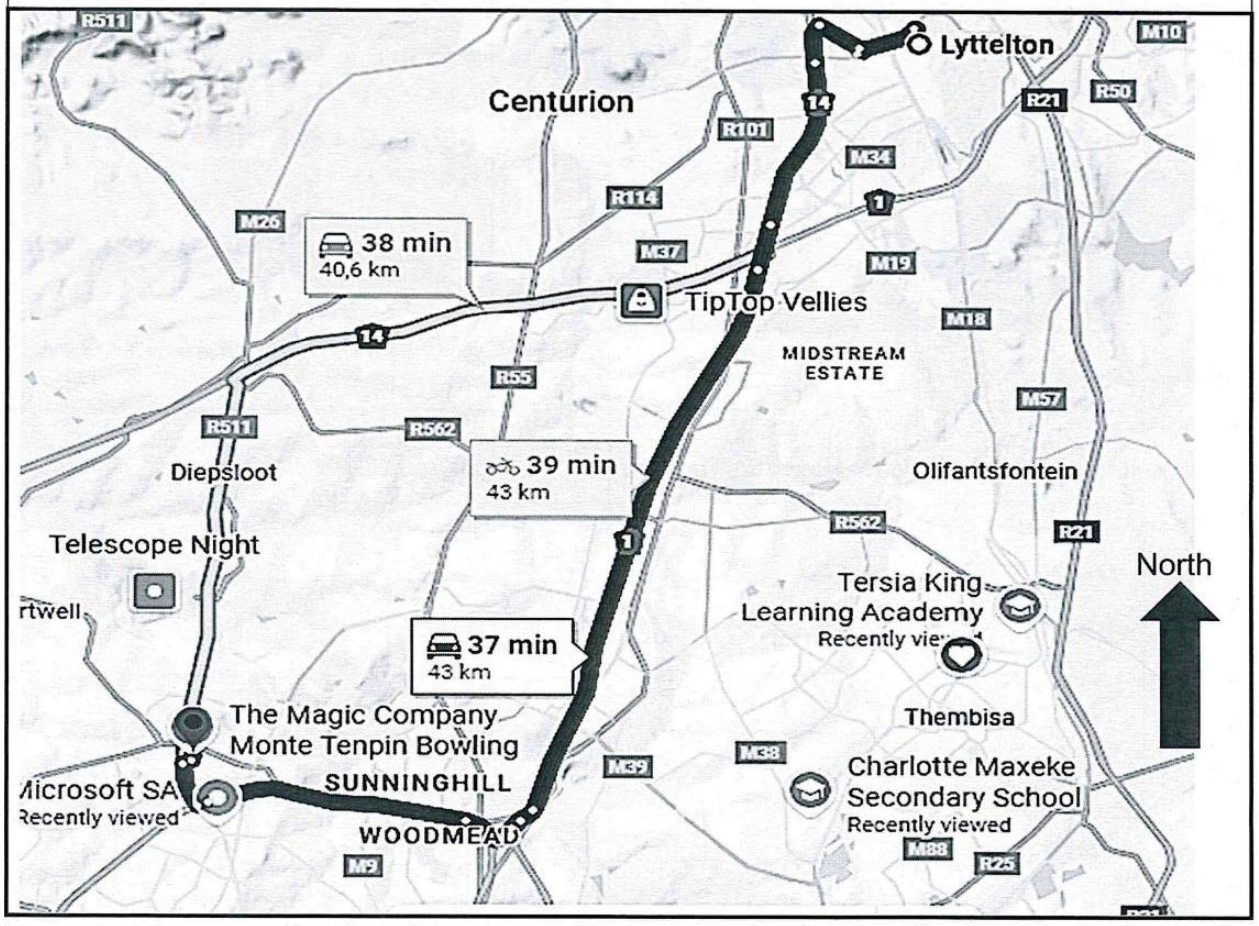
Complete the diagram by filling in names for (A), (B) and (C).



(3)

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

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 Lyttleton 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

TOTAL: 150

END