



GAUTENG PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

GAUTENG DEPARTMENT OF EDUCATION

GRADE 12

JUNE EXAMINATION 2022

10602

MATHEMATICAL LITERACY

Stanmorephysics.com
PAPER 2

TIME: 2 hours

MARKS: 100

11 pages

MATHEMATICAL LITERACY: Paper 2



10602E

X10



INSTRUCTIONS AND INFORMATION

1. This question paper consists of FOUR questions. Answer ALL the questions.
2. Use the ANNEXURES on pages 5 and 7 to answer the following questions:
 ANNEXURE A on page 5 for QUESTION 1.1
 ANNEXURE B on page 7 for QUESTION 2.2
3. Number the questions correctly according to the numbering system used in this question paper.
4. Start the answer to EACH question on a NEW page.
5. You may use an approved calculator (non-programmable and non-graphical), unless stated otherwise.
6. Show ALL calculations clearly.
7. Round-off ALL final answers appropriately accordingly to the given context, unless stated otherwise.
8. Indicate units of measurement, where applicable.
9. Maps and diagrams are NOT necessarily drawn to scale, unless stated otherwise.
10. Write neatly and legibly.





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QUESTION 1

1.1 ANNEXURE A represents the Kruger National Park with all camps and gates.

- 1.1.1 Name the country next to the Kruger National Park as shown in the annexure. (2)
- 1.1.2 How many tented camps are shown on the map? (2)
- 1.1.3 How many gates are on the map? (2)
- 1.1.4 What type of camp is Lower Sabie? (2)

1.2 Below is a table tennis bat with dimensions. Use the information given to answer the questions that follow.



- 1.2.1 Write the height of the bat in cm. (2)
- 1.2.2 What is the difference in metres between the width of the handle of the bat, and the width of the bat? (3)
- 1.2.3 Write the height of the handle of the bat to the width of the bat as a simplified ratio. (3)

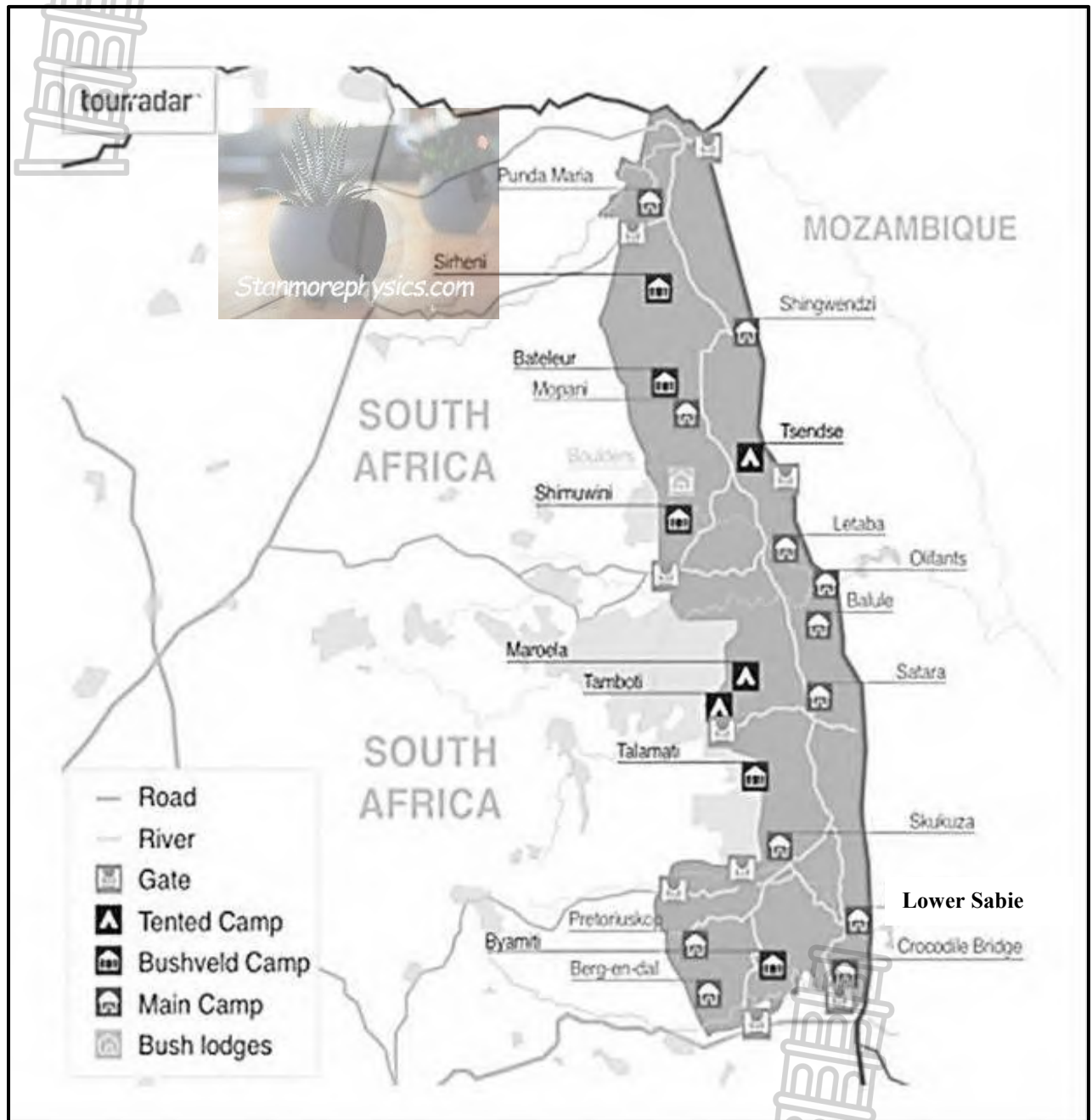
1.3 A caterer has prepared light snacks for a table tennis match. Players are allowed to choose their snacks and the choices are as follows: A muffin or a sandwich with a Coke, a juice or bottled water.

- 1.3.1 There are 14 couples, and she needs to prepare 3 more packs of light snacks. How many light snacks will she have to prepare? (2)
- 1.3.2 Write down the number of combination options from which they can choose. (2)

[20]

ANNEXURE A: QUESTION 1.1

MAP OF THE KRUGER NATIONAL PARK WITH GATES AND CAMPING SITES



[Source: <https://www.transport.gov.za/>. Accessed 15 December 2021.]

QUESTION 2

2.1 The distance map below shows distances (in km) between some towns in South Africa. Answer the questions based on the distance map below.

										Pretoria
										1120
									Polokwane	1393
									273	
								Nelspruit	320	1373
									342	
								Mafikeng	589	565
									1122	292
								Kimberley	360	832
									805	752
									532	
								Johannesburg	467	273
									358	331
									1062	58
								East London	992	750
									1029	1214
									1323	300
									1050	
								Durban	667	598
									842	859
									689	929
									927	656
								Cape Town	1660	1042
									1402	960
									1320	1779
									1736	756
									1463	
								Bloemfontein	998	667
									575	417
									175	427
									771	748
									635	475

Distances given are by the best and most practical routes from centre to centre, and not necessarily the shortest

[Source: <https://www.aroundaboutcars.com/more-info/south-african-road-distances>. Accessed on 19 October 2021.]

2.1.1 What is the distance in metres between East London and Mafikeng? (3)

2.1.2 A family travels from Cape Town to Johannesburg and then proceeds to Bloemfontein. The family claims that the total distance travelled is 40 km more than the distance between Cape Town and Nelspruit. With calculations prove whether their claim is valid. (6)

2.1.3 Calculate the time in hours and minutes that they will take to travel from Polokwane to Port Elizabeth, if they are travelling at an average speed of 105 km/h and have two breaks of 1 hour 15 minutes in total.

You may use the formula: **Distance = Speed x Time** (6)

2.2 ANNEXURE B represents the Comrades Marathon route, which is a distance of 90 km, between Durban and Pietermaritzburg.

2.2.1 What type of scale is shown on the map? (2)

2.2.2 Use the given scale to calculate the distance in metres between Hillcrest and Pinetown. Round-off your final answer to the nearest metre. (4)

2.2.3 Give the general direction from Camperdown to Westville. (2)

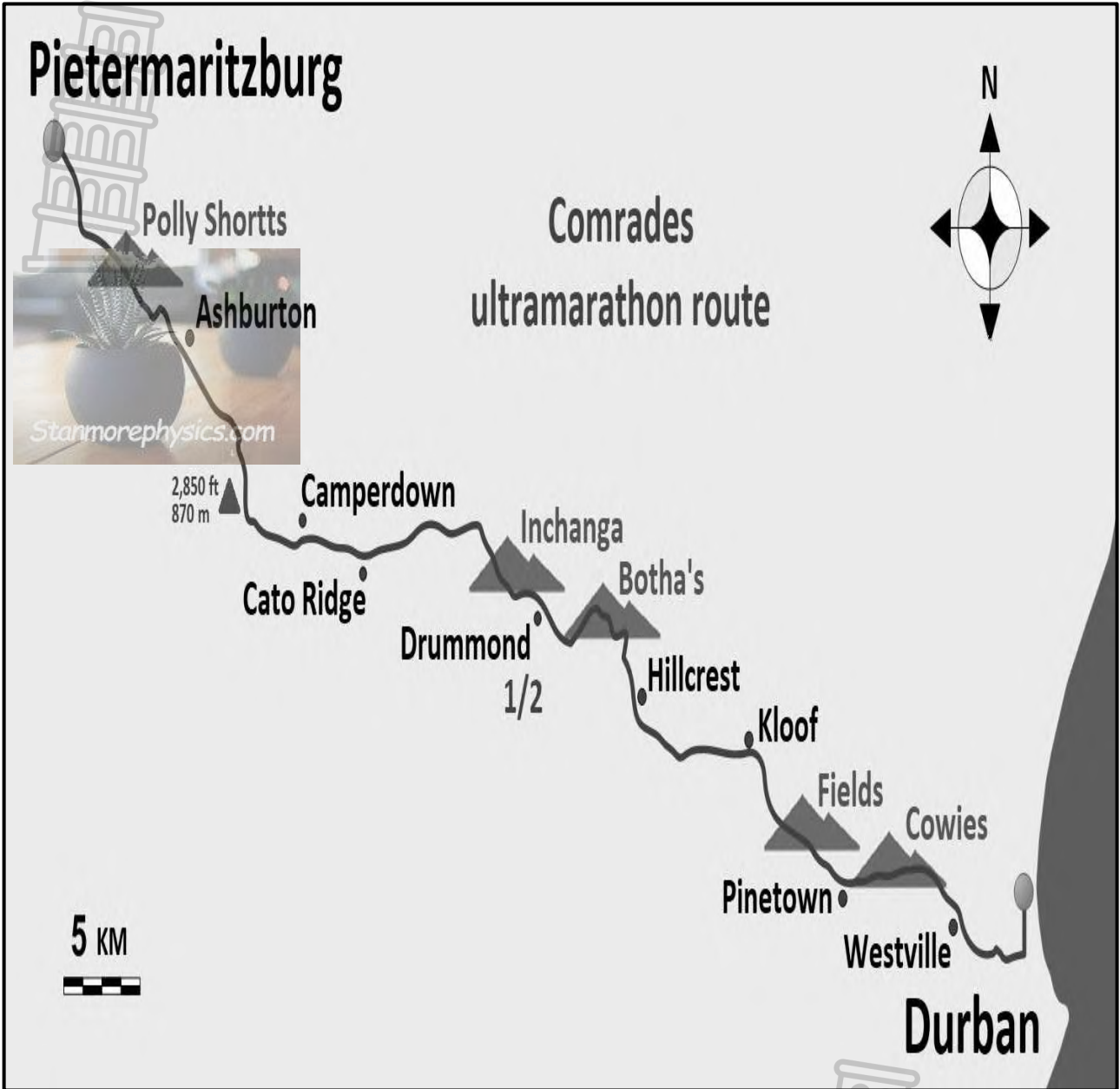
2.2.4 The map shows that 870 m = 2 850 feet. Determine, rounded-off to two decimals, that the conversion factor is in the form, 1 foot = ... cm. (4)

2.2.5 David Vazi travelled by car to the Comrades Marathon during 2019. His car consumed fuel at a rate of 10 km per litre. If the fuel price is R16, 98 per litre, calculate the cost of a return journey by car, between Polokwane and Durban. He decided that he will travel by aeroplane from Durban to Pietermaritzburg.

NOTE: Refer to the distance map in QUESTION 2.1. (5)

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ANNEXURE B: QUESTION 2.2



[Source: <https://www.comrades.com/>. Accessed on 21 November 2021.]

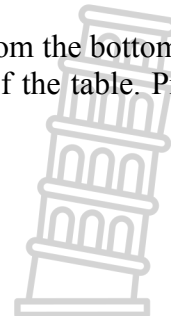
QUESTION 3

3.1 Table tennis is a very popular sport at the Olympic Games. The diagram below shows the dimensions of a table tennis table.

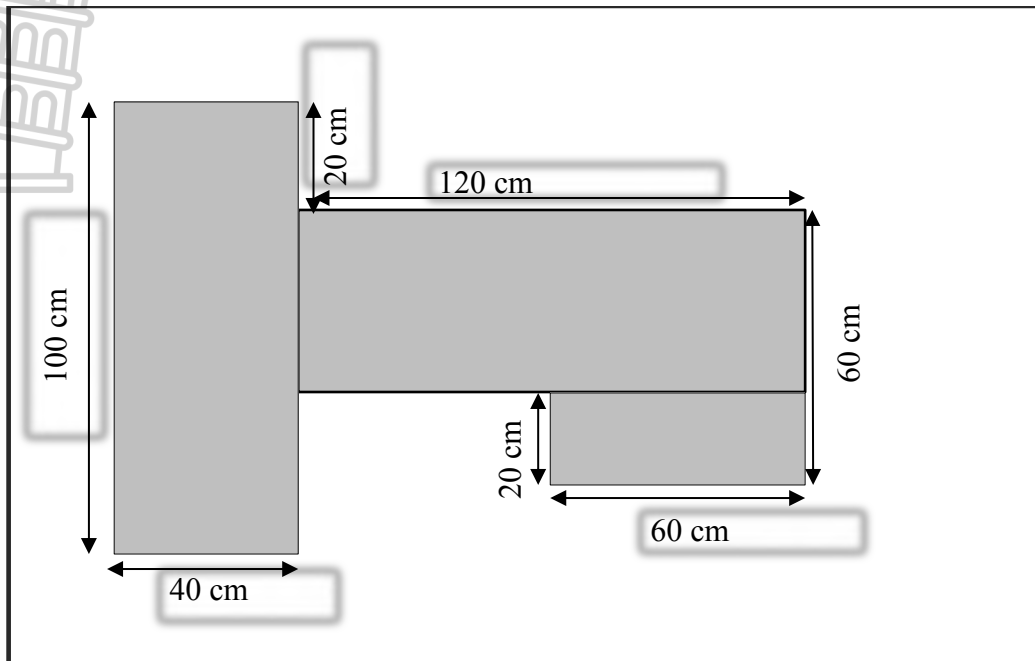
NOTE: The net has an overhang of 15,25 cm on both sides.



- 3.1.1 Determine the length of the net in cm. (3)
- 3.1.2 Calculate the difference between the length and the width of the table in mm. (3)
- 3.1.3 Table tennis players are serious about their fitness levels. A game started at 10:08 and lasted for 1 hour and 58 minutes. At what time did the game end? (3)
- 3.1.4 One of the players argues that the height of the table from the bottom (ground) up to the top of the net is 60 cm less than the width of the table. Prove, with calculations, whether his argument is valid. (4)



- 3.2 A Mathematical Literacy teacher is making teaching aids for a lesson on measurement for her classroom. She draws the shapes, paints them, and sticks them onto the classroom walls. The shape below with dimensions is one of her teaching aids.



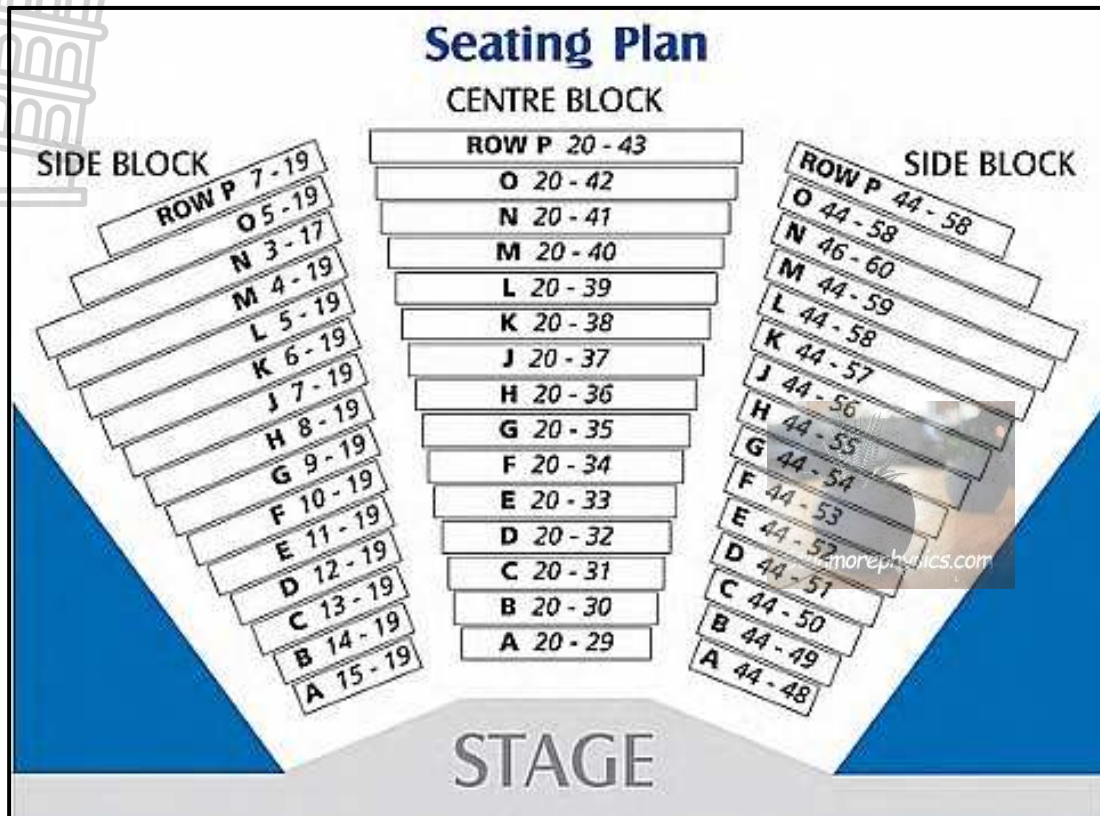
- 3.2.1 A learner uses string to measure the perimeter of the shaded figure. What is the length of the string? (3)
- 3.2.2 Calculate the total area of the shape in m^2 .
You may use the formula: **Area of a rectangle is = Length x Width** (5)
- 3.2.3 She paints this shape with two coats of paint and has prepared two of these shapes for her class. If one litre of paint covers $6,2 m^2$, determine (rounded-off to two decimal places) the number of litres of paint required to paint two shapes. (5)
- 3.2.4 The salesman at the hardware store stated that one 500 ml can of paint is not sufficient to paint the two shapes completely. Verify, with calculations, whether his statement is valid. (3)

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QUESTION 4

The diagram below shows a seating plan for a theatre.

4.1



- 4.1.1 What is the probability of choosing a seat from Row **H** from the seats in the centre block? Give your answer as a percentage. (3)
- 4.1.2 What is the seat number for a person seated on the right side of the stage, at the fourth row from the stage, in the first seat from the passage between the centre block and the side block? (2)
- 4.1.3 What is the total number of seats in rows D, E, and H? (4)



- 4.2 BMI (Body Mass Index) is a number calculated by using a person's weight and height. The higher the BMI, the more a person is at risk of having health problems. To calculate BMI you can use the formula:

$$(\text{Height in m})^2 \times \text{BMI} = \text{Weight in kg}$$

The table below shows the BMI and the health risks related to it:

BMI	CLASSIFICATION	HEALTH RISK
<18,5	Underweight	Minimal
18,5–24,9	Normal	Minimal
25–29,9	Overweight	Increased
30–34,9	Obese	High
35–39,9	Severely obese	Very high
>40	Morbidly obese	Extremely high

- 4.2.1 What is the maximum BMI for an overweight person? (2)
- 4.2.2 Mary weighs 95 kg and is 1,7 m tall. She states that her health risk is minimal. Use a calculation to verify if her statement is valid. (4)
- 4.2.3 What can Mary do to improve her health risk? Mention TWO lifestyle changes. (4)

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TOTAL: 100

