Hillcrest High School

Grade 10

MATHEMATICAL LITERACY P2

NOVEMBER 2024

MARKS: 75

TIME: 1½ Hours

EXAMINER: Mrs J. Leuschke

MODERATOR: Ms. G. Stow

Instructions:

Read the following instructions carefully before answering the questions.

1. This question paper consists of 4 questions and 7 pages.

2. Clearly show ALL calculations, diagrams, graphs, etc which you have used to determine your answers.

3. Answers only will NOT necessarily be awarded full marks.

4. An approved scientific calculator (non-programmable) may be used, unless otherwise stated.

5. If necessary, answers should be rounded off to TWO decimal places, unless otherwise stated, or appropriately within the given context.

6. Number the answers EXACTLY as the questions are numbered.

7. Diagrams are not necessarily drawn to scale.

It is in your own interest to write legibly and to present your work neatly.

QUESTION 1

1.1 Given below is a simple cheese and tomato pizza recipe. Study the recipe and answer the questions that follow.

SIMPLE CHEESE AND TOMATO PIZZA
(Makes 1 large pizza)
$\frac{3}{4}$ cup homemade pizza dough
1 tbsp olive oil
2 cloves garlic
75 mℓ tomato paste
0,23 kg mozzarella cheese
2 tomatoes
Salt and pepper to taste

Remember:
1 cup = 250 mℓ
1 tablespoon = 15 mℓ
1 teaspoon = 5 mℓ

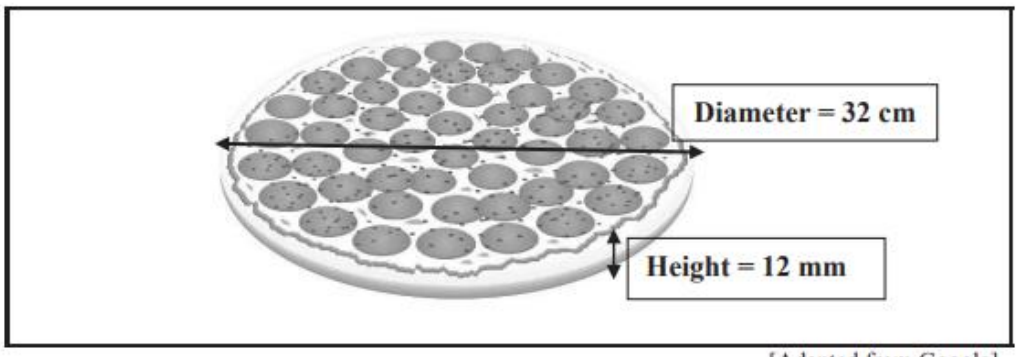
1.1.1.1 Determine the amount of homemade pizza dough needed for 3 large pizzas. (2)

1.1.1.2 Convert your answer in 1.1.1.1 to ml. (2)

1.1.2 How many tablespoons of tomato paste is needed for this recipe? (2)

1.1.3 Convert the amount of cheese to grams. (2)

1.2 When the pizza is completed, the base has a diameter of 32cm and a height of 1,2cm.



[Adapted from Google]

1.2.1 Write down the radius of one pizza base. (2)

1.2.2 Calculate the volume of one pizza base in cm^3. (2)

You may use the formula: Volume = $\pi r^2 \times h$; where $\pi = 3,142$

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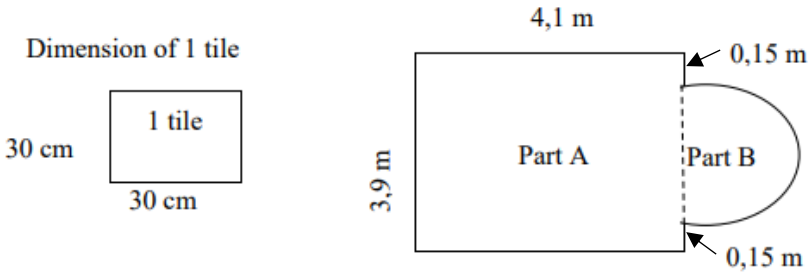
QUESTION 2

Mr Roux is preparing to put tiles on the floor of the lounge in his house. The picture below shows the dimensions of the floor. Part B is a semi circle.



2.1 Use calculations to determine the diameter of part B. (3)

2.2 Calculate the total area of the floor. (3)

2.3 Determine the area to be tiled if only part A will be tiled. (3)

2.4 If the area of one tile is 30cm by 30cm, calculate the number of tiles that would be needed to tile part A. (5)

2.5 There are 10 tiles in one box. Mr Roux states that he will need to buy 18 boxes of tiles. Verify, showing calculations, whether or not he is correct. (4)

2.6 There was another tile that Mr Roux was interested in using. The area of the tile was 2160cm². Write the ratio of the tile he used to the other tile in the simplest form. (3)

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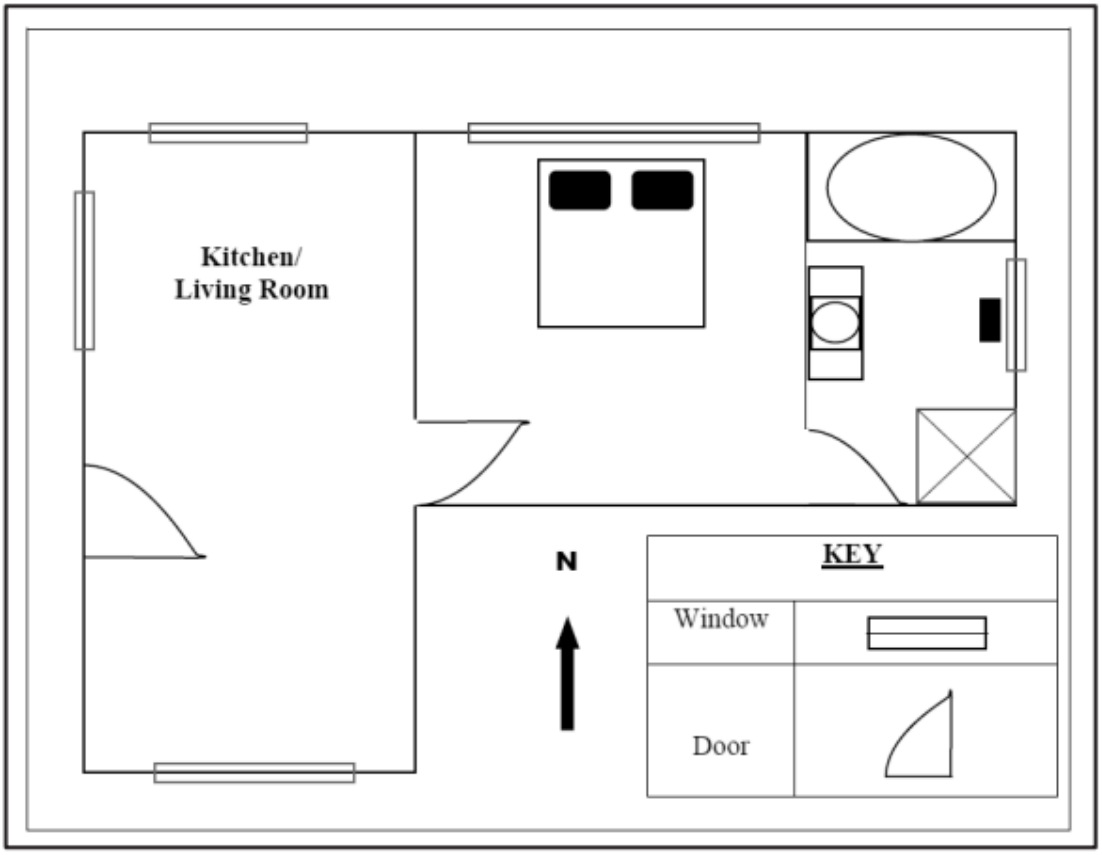
QUESTION 3

Given below is a simple floor plan of a one-bedroomed flat. Study the plan and answer the questions that follow. The floor plan is not drawn to scale.



3.1 How many windows does the flat have? (2)

3.2 The living room/kitchen is going to be tiled. The scale used for this plan is 1: 50.

3.2.1 Explain the meaning of the scale 1 : 50. (2)

3.2.2 If the width on the plan measures 4,8cm and the length measures 9,3cm, calculate the real area of the room. Give your answer in meters (m^2). (4)

You may use the formula: Area = length × breadth

3.2.3 The area of the bathroom is 3,5m^2. Claire, the owner of the flat, states that the area of the bathroom : kitchen/living room is 1 : 5. Verify, with calculations, whether the statement is correct or not. (3)

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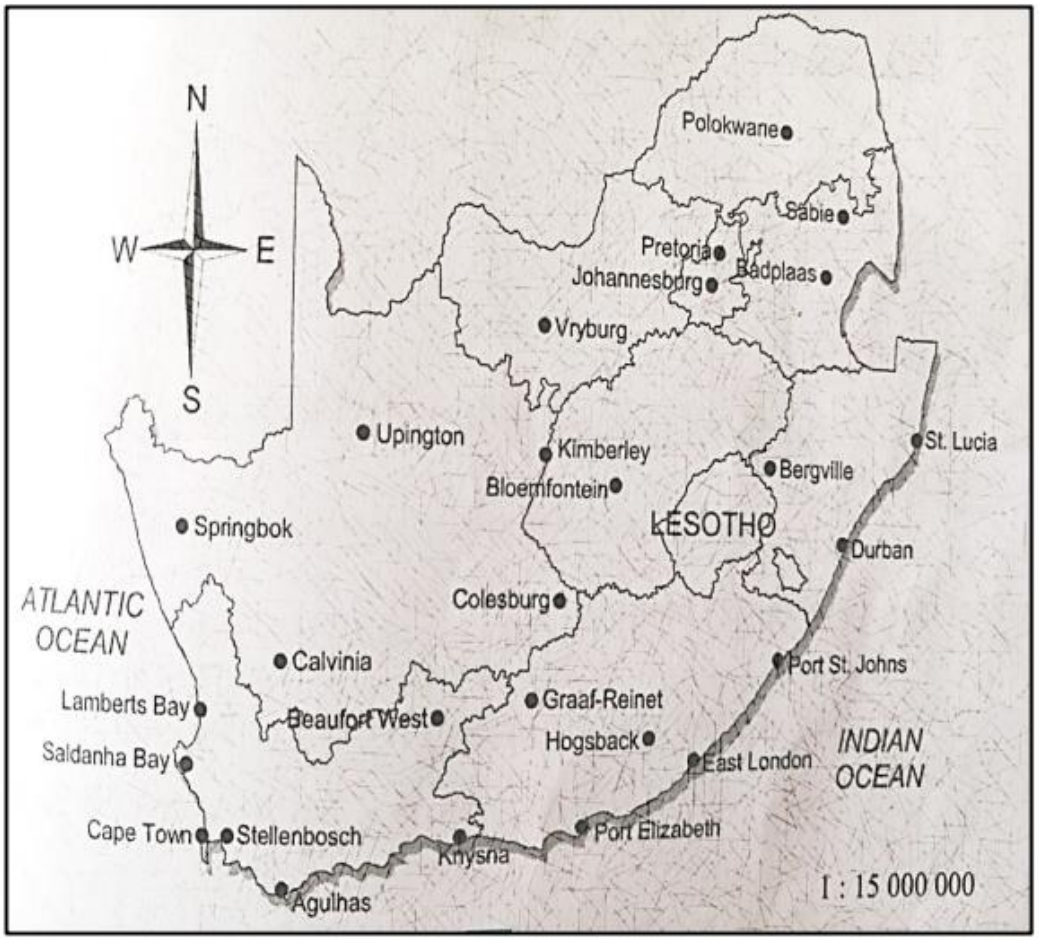
QUESTION 4

4.1 Refer to the map of South Africa below and answer the questions that follow.



4.1.1 What type of scale is given in the diagram? (2)

4.1.2 Write down the general direction of Badplaas from Colesberg. (2)

4.1.3 Verify, using the scale that the actual straight-line distance between East London and Bloemfontein is 600km, if the map distance is 4cm. Show all calculations. (4)

4.1.4 In which province is Stellenbosch found? (2)

4.1.5 What is the probability that this province will be randomly selected in South Africa? Give your answer as a decimal correct to two decimal places. (3)

4.1.6 The distance from Port St Johns to East London is 320km. Calculate the distance on the map. (3)

4.1.7 Verify, by use of calculations, that 15 000 000cm is 150km. (3)

4.2 Below is a picture of a cylindrically shaped 400g can of fish. The can is fully covered by a label with dimensions as shown in the picture.

Picture of the label on a can of fish	Dimensions of the label on the can
	Diameter = 73 mm Height = 10,6 cm

You may use the following formulae:

Circumference of a circle = diameter × 3,142
Surface area of the label around the can = circumference × height

Use the information to answer the questions below.

4.2.1 Calculate (in cm²) the area of the label around the can. (4)

4.2.2 Determine the total length of the label if an overlap of 0,6cm is needed for it to be glued around the can. (2)

4.2.3 If the label costs R0,76 per cm² to make, calculate the cost of the labels for 50 tins. Give your answer rounded to the nearest rand. (3)

4.2.4 The tin has an allowance of 5% in weight. Calculate the minimum that the tin can weigh. (3)

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