HILLCREST HIGH SCHOOL

Mathematical Literacy

Examination

Gr 11 Paper 2

JUNE 2022

Examiner: Mrs. Leuschke **Moderator: Ms. Stow**

MARKS: 75 **TIME: 1½ hours**

NAME:					
TEACHER :					
Q1	Q2	Q3	Q4	TOTAL	GRAND TOTAL

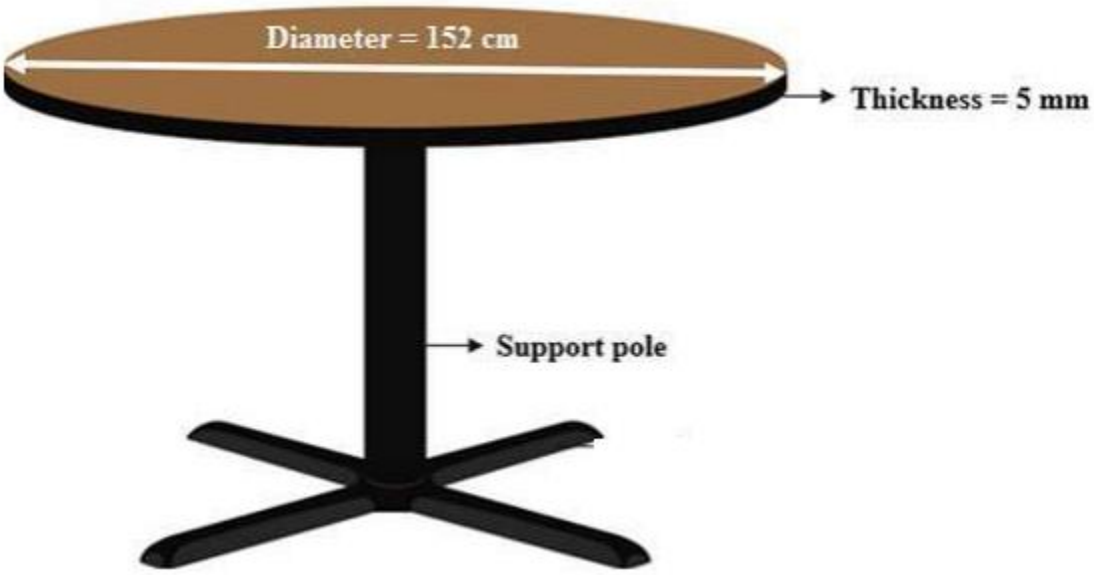
INSTRUCTIONS AND INFORMATION:

Read the following instructions carefully before answering the questions.

1. This question paper consists of 4 questions and 11 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.
8. It is in your own interest to write legibly and to present your work neatly.

Question 1

Susan purchased 5 round tables. The diagram below shows the dimensions of the round table Susan purchased. The support pole has a height of 2,65 feet.



Use the information above to answer the questions that follow.

1.1 State the relationship between the radius and the diameter of any circle. (2)

1.2 Convert the diameter of the table to metres. (2)

1.3 Determine the radius of the table in metres. (2)

1.4 How many metres is the support pole, given that 1 foot = 3,281m? (2)

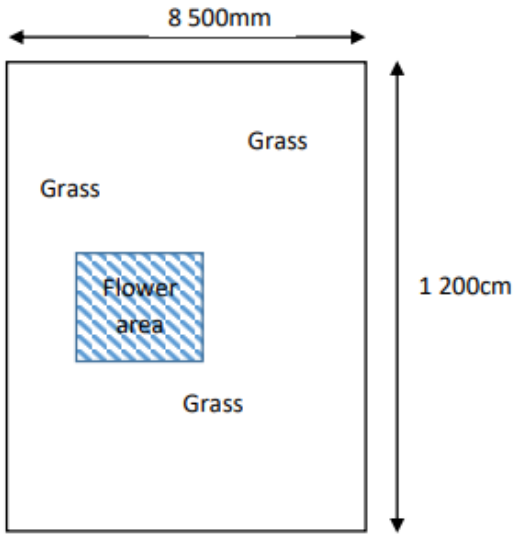
1.5 Calculate the total length of wood needed to make the support poles for 5 tables. Give your answer in metres. (2)

1.6 If the support pole of one table needed to be increased by 8%, what would the new length be in metres? (3)

[13]

Question 2

Bradley wants to decorate his yard by planting grass. The yard is rectangular shaped and has a square area that will be reserved for flowers (flower area). Study the diagram and answer the questions that follow.



Dimensions of the yard

Length = **1 200cm**

Width = **8 500mm**

Side of a square = **3 m**

Note : The flower area will not be covered with grass

2.1 Define the term perimeter. (2)

2.2 Determine the perimeter of the yard in metres. (5)

2.3 Calculate the area (in m^2) that will be covered with grass. (6)

[13]

Question 3

The grade 11 learners want to renovate the bathrooms at their school. They decide to tile the bottom section of the inside walls and to paint the top section. The back and side walls have no doors or windows, and the toilets are only installed after the painting and tiling has been finished. The wall on the front has only one window and one door.

Use the ANNEXURE to find the required information regarding the material and the dimensions of the bathroom to answer the questions.

3.1 Calculate the area of the following. Give your answers in metres^2.

3.1.1 The bottom section of the back wall, rounded to 2 decimal places. (3)

3.1.2 The bottom section of the 2 side walls, rounded to 2 decimal places. (3)

3.1.3 Calculate the total area of the bottom sections to be tiled. Give your answer rounded to the nearest m^2. (3)

3.2 Calculate the area of the bottom section of the front wall that must be tiled (in m^2), correct to 2 decimal places. (4)

3.3 Calculate the total area that should be tiled. (2)

3.4 Each tile covers an area of $400cm^2$.

3.4.1 Calculate the total number of tiles needed to cover the total area. (Without allowing for cutting and breakages.) (5)

3.4.2 One of the group of learners says that if 407 tiles are needed, 442 tiles are needed when allowing for the 8% for breakages and cutting. Verify, showing all calculations, whether or not they are correct. (4)

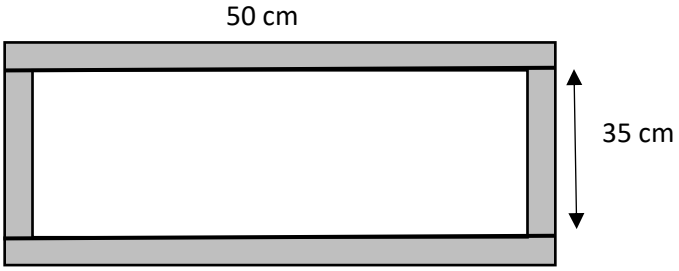
3.4.3 Calculate the number of boxes of tiles needed. (3)

3.5 One of the group states that if the area to be painted is 18,42m², 4 litres of paint is what they will need to paint everything. Verify, showing all calculations, whether or not they are correct. (Paint may only be bought in whole litres.) (3)

[30]

Question 4

Mr Singh is a retired carpenter and decides he wants to make picture frames and sell them to earn some money.



Use the diagram to help answer the questions.

4.1 The frame is made up of 4 pieces of wood. The length is the entire top and bottom of the frame, but the width is the piece which fits between the length pieces. Calculate the amount of wood needed to make one frame. (2)

4.2 If wood costs R 48,74 per metre, calculate the cost of wood for one frame. (2)

4.3 Verify that, using calculations, the width of the frame is 38cm, if the length is 131,58% of the width. (3)

4.4 Mr Singh decided to buy enough wood to make 7 frames. How much wood would he need to buy if he purchases an extra 10% for errors? (Use the answer from Question 4.1) (4)

4.5 If the thickness of the wood is 4cm; calculate the perimeter of the frame. (2)

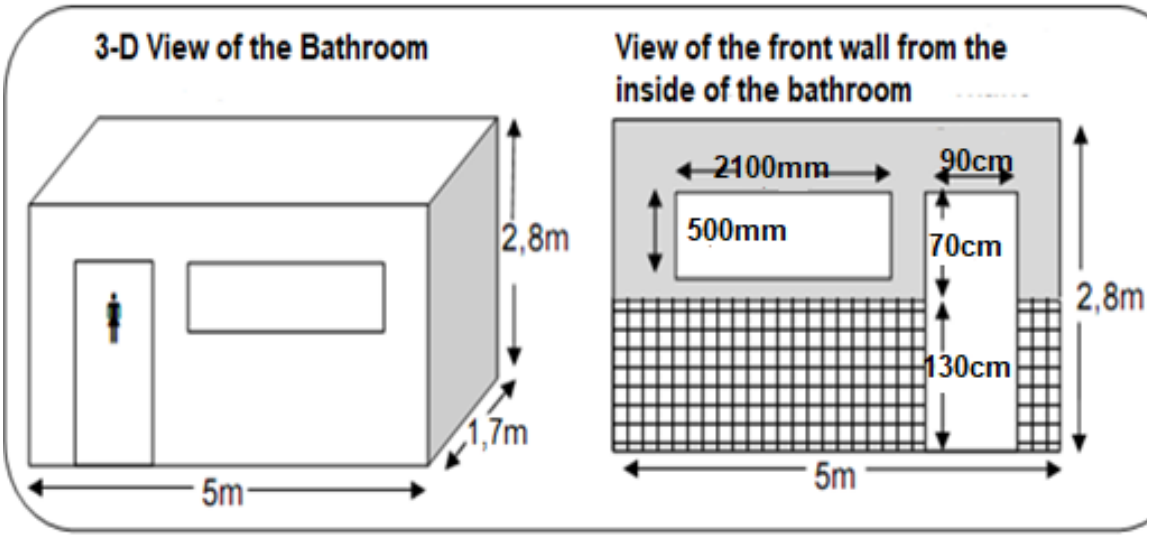
4.6 The glass in the frame is made 2cm shorter of the outer dimensions of the frame. Calculate the area of the glass for one frame. (3)

4.7 To courier the frames; a box of 55cm x 45cm x 8cm is used. Verify whether the box is big enough or not for one frame. (3)

[19]

ANNEXURE – QUESTION 3

DIMENSIONS OF BATHROOM TO BE TILED



NOTE: The dimensions reflect inside measured lengths, widths and heights

INFORMATION REGARDING THE MATERIAL TO BE USED

- **Tiles are sold in boxes of 24 tiles per box and every box covers 0,96m².**
- **They should buy 8% more to make provision for cutting and breakages.**
- **Solly's Paint Shop gave them a quotation for paint (see quotation).**
- **The coverage rate of the selected paint is 5,4m² per litre.**

Solly's Paint Shop gave the following quotation for the paint:

Solly's Paint Shop - Quotation	
1 × 2-litre tin of white paint	R170.99 - *15% VAT incl*
1×1-litre tin of white paint	R 94.99 - *15% VAT incl*

The following formula may be used:

Area of a rectangle = length × width