



**GAUTENG PROVINCE**  
EDUCATION  
REPUBLIC OF SOUTH AFRICA

**GRADE 12**

**MATHEMATICAL LITERACY**  
**ASSIGNMENT**  
**TOPICS: MEASUREMENTS, MAPS AND SCALE**  
**MARKS: 60**  
**2024 TERM 2**  
**SUGGESTED TIME: 70 MINUTES**  
Stanmorephysics.com

## INSTRUCTIONS AND INFORMATION

1. This assignment consists of FOUR questions. Answer ALL the questions.
2. Number the questions correctly according to the numbering system used in this assignment.
3. Start EACH question on a NEW page.
4. You may use an approved calculator (Non-programmable and non-graphical, unless stated otherwise).
5. Show ALL calculations clearly.
6. Round off ALL final answers appropriately according to the given context, unless stated otherwise.
7. Indicate units of measurement, where applicable
8. Maps and diagrams are NOT necessarily drawn to scale, unless stated otherwise.
9. Write neatly and legible

**This assignment consists of 4 questions and 10 pages**

**QUESTION 1 [CONVERSIONS]**



1.1. Lihle is going to bake some vanilla cupcakes that she wants to sell to raise money for charity. Use the recipe below to answer the questions that follow.

VANILLA CUPCAKES

**Ingredients**

185g butter  
220g castor sugar  
3 extra-large eggs  
3ml vanilla essence  
80ml water  
80ml milk  
300g cake flours.com  
20ml baking powder

**Butter Icing**

80g butter  
115g icing sugar  
15ml boiling water  
1 tub vermicelli  
for garnishing

MAKES 24 CUPCAKES



1.1.1. Lihle does not have a 20 ml measuring spoon so she decides to use a teaspoon. How many teaspoons (5ml) of baking powder does Lihle need for one batch of cupcakes? (2)

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1.1.2. How many batches of cupcakes does Lihle need to make to produce 120 cupcakes? (2)

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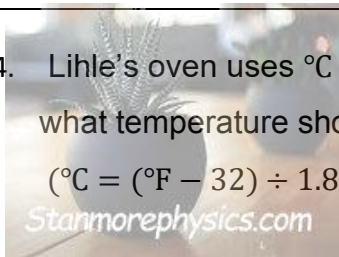
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1.1.3. How many litres of milk does Lihle need to make 120 cupcakes? (2)

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1.1.4. Lihle's oven uses °C but the recipe tells her to set the oven to 425°F, what temperature should Danielle set the oven to in °C?  
(°C = (°F - 32) ÷ 1.8) (2)

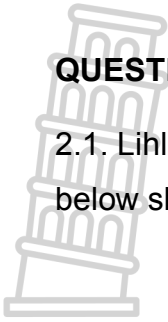


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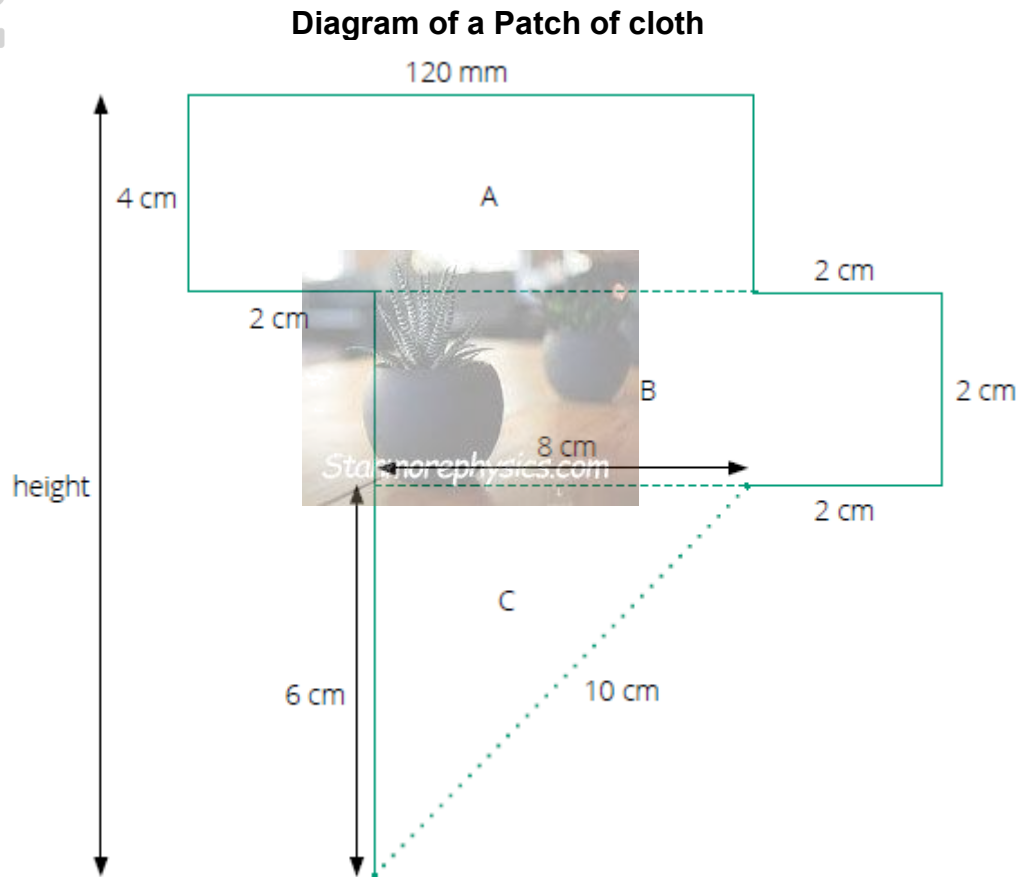
[8]





**QUESTION 2 [PERIMETER, AREA AND BMI]**

2.1. Lihle is designing an outfit she will wear for her matric farewell. The diagram below shows a patch of cloth which is used to make her dress.



2.1.1. Calculate the perimeter of the whole patch. (3)

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2.1.2. Calculate the area of rectangle A. You may use the formula: (3)  
 **$Area = length \times breadth$**

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2.1.3. Determine the height of the whole patch in metres. (3)

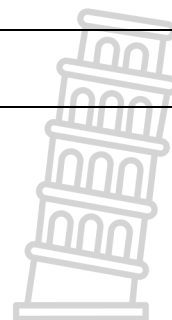
2.1.4. Calculate the area of triangle C. You may use the formula:  
 $Area = \frac{1}{2} \times base \times height$  (2)

2.2. Lihle has a weight of 65 000 g and a height of 165 cm. Calculate Lihle's Body Mass Index (BMI), round off the answer to two decimal places.

You may use the formula:

$$BMI = \frac{\text{Weight in kg}}{(\text{height in metres})^2} \quad (5)$$

[16]

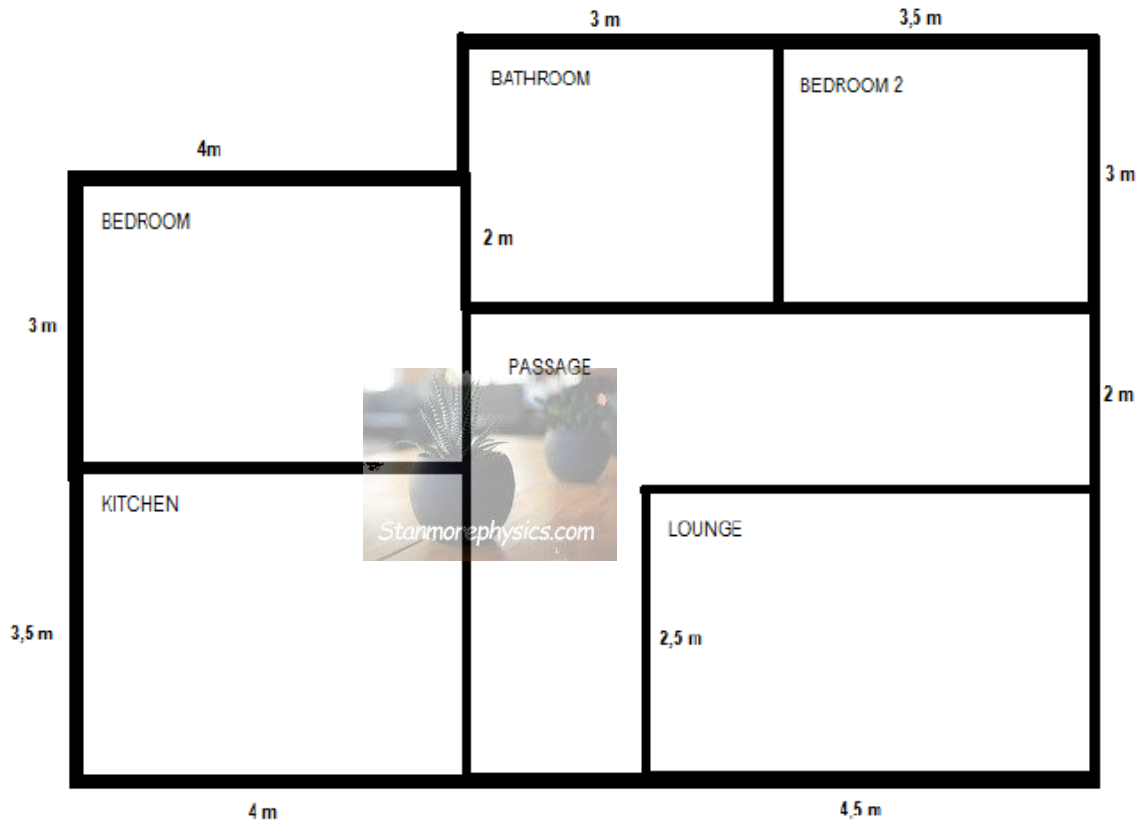


**QUESTION 3 [AREA AND VOLUME]**

3.1. Siyabonga is planning on building a new house for his family. Below are the proposed dimensions of the house. Use the information given below to answer the questions that follow.

The following formula may be used:

$$\text{Area} = \text{length} \times \text{breadth}$$



3.1.1. Siyabonga wants to tile the bathroom floor; calculate the area he needs to tile in square metres. (2)

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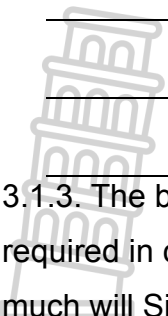
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3.1.2. How many 550 mm x 550 mm tiles does Siyabonga need to tile the bathroom? (4)

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3.1.3. The builder recommends to Siyabonga that he buys 10% more tiles than required in case of breakages. The tiles he likes are R 234 for a box of 6 tiles. How much will Siyabonga spend on tiles? (6)

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3.1.4. Calculate the total cost of tiling the bathroom. Include the following:

- The cost of the labour (R 130/hour or part thereof), The tiler spent 6 hours 15 minutes tiling the bathroom.
- Grouting (1 × 5Kg bag @ R 46.90),
- Adhesive (3 × 20 Kg bags @ R 69.90/bag)
- And cost for tiles. (5)



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3.2. The diagram below shows a rectangular prism-shaped water trough made of concrete.

	<p><b>Outer dimensions of Water trough</b></p> <p>length = 3 m width = 685 mm height = 40 cm [1 ℓ (litre) = 1 000 <math>cm^3</math>]</p>
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3.2.1. Calculate, in  $cm^3$ , the volume of concrete used to make the water trough if the trough can hold a maximum of 485 ℓ water. (7)

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3.2.2. A cow drinks 56 ℓ water per day. Zipho states that a full trough has enough water for 8 cows per day. Verify with calculations whether this statement is correct.

(4)

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**QUESTION 4 [MAPS & SCALES]**

4.1. DHL is an international courier, package delivery and express mail service company that delivers parcels countrywide.

DHL travels from Johannesburg to Cape Town either by truck or plane.



[Source: <www.google.com/maps/>]

Use the above map and information to answer the questions that follow.

4.1.1. Calculate the average speed, in km/h, of the truck travelling from Johannesburg to Cape Town, using the formula:  $\text{Speed} = \text{Distance} \div \text{Time}$

(3)

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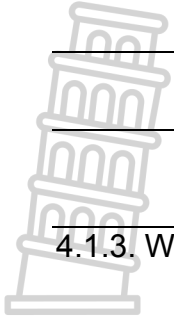
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4.1.2. If 12,6 cm on the map is equal to 1 262 km in real life, determine the unit scale of the map.

(3)



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4.1.3. What is the General direction of Pretoria from Cape Town? (2)

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[8]

**GRAND TOTAL= 60 MARKS**

