HILLCREST HIGH SCHOOL

Mathematical Literacy

Examination

Gr 10 Paper 2

JUNE 2022

Examiner: Mrs. Leuschke **Moderator: Mrs. Jugmohan**

MARKS: 50 **TIME: 1 hour**

NAME:				
TEACHER :				
Q1	Q2	Q3	TOTAL	GRAND TOTAL

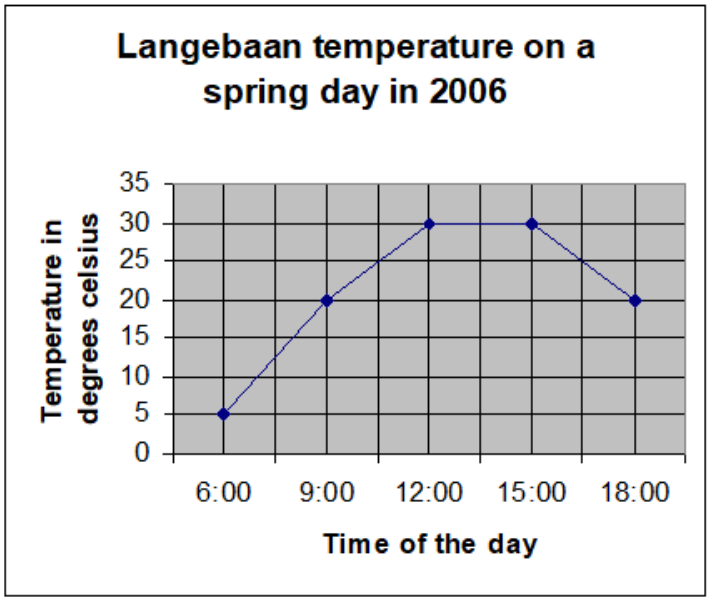
INSTRUCTIONS AND INFORMATION:

Read the following instructions carefully before answering the questions.

1. This question paper consists of 3 questions and 6 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

Use the graph below to answer the questions that follow.



1.1 At what time of day did the temperature reach 12,5°C? (2)

1.2 What was the temperature reading at 09:00? (2)

1.3 At what time did the temperature reach maximum levels? (2)

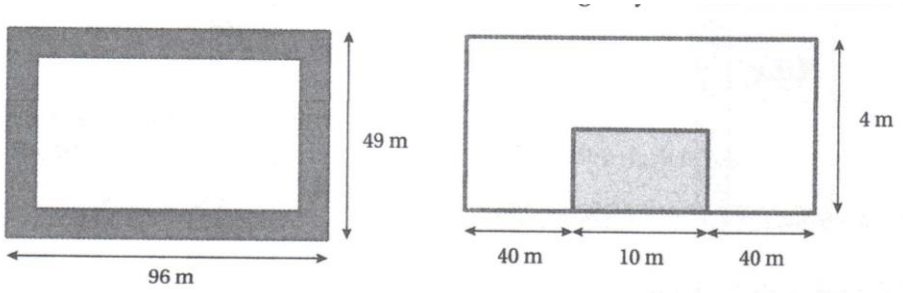
1.4 At 6am the temperature was 5ºC. Convert 5ºC to Fahrenheit using the formula below. Round off your answer to the nearest ten. (3)

$$°F = (°C \times \frac{9}{5}) + 32$$

[9]

Question 2

Sandile wants to construct a large building to store animal feed. The space available is 96m x 49m. Building regulations state that there must be at least 3m open space around the building.



2.1 What is the maximum length that the building can be? (2)

2.2 What is the maximum width that the building can be? (2)

2.3 Calculate the perimeter of the building using the length and width from the questions above. (2)

2.4 If Sandile decides to build according to the maximum dimensions, he says that the area of the building will be over 4000m². Verify, showing all calculations, whether or not he is correct? (4)

2.5 The building will have a flat roof at a cost of R79,95/m². If the roof is 15% bigger than the ground area, what will the cost be to put up the roof? (5)

2.6 The building is 4m high and there is only one large door on the front side. The doors are 10m wide and 2m high.

2.6.1 Calculate the area of the doors. (2)

2.6.2 If Sandile wants to paint the whole building (inside and outside) except the door, calculate the area that needs to be painted. (Hint – calculate the area of each of the walls individually first.) (6)

2.6.3 If the paint that Sandile chooses has a coverage rate of 1 litre/5m², how many litres of paint will he need to buy? (You are only allowed to buy whole litres of paint.) (2)

2.6.4 The paint costs R98,75 per litre. Sandile says that he will have to spend over R20 000 on paint. Verify, showing all calculations, whether or not he is correct. (3)

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Question 3

Grace is having her grandparents round to visit. She decides to bake a cake for them. She finds the recipe below which makes a cake that serves 6 people.

Cheerful Chocolate Cake

Ingredients:

150g flour
$\frac{3}{4}$ cup sugar
2 tsp. baking powder
3 eggs
$\frac{1}{8}$ tsp. salt
2 level tbsp. cocoa
$\frac{1}{2}$ cup water
1 tbsp. butter

Conversions:
°C = (°F – 32) ÷ 18
tsp = 5 ml
tbsp. = 15 ml
1 cup = 250 ml
1kg = 1 000g

Baked in a moderately hot oven, between 385°F and 400°F for 45 minutes

Icing for the cake
Ingredients:
3 cups icing sugar
4 tbsp. butter
$\frac{1}{8}$ tsp. salt
2 tbsp. hot water
1 tsp. vanilla essence
3 tbsp. cocoa.

3.1 How many people can be served with the cake? (2)

3.2 Determine the quantity of sugar needed for the cake only. Give your answer in millimeters. (2)

3.3 Grace states that 75ml of butter is needed in total. Verify, showing all calculations, whether or not she is correct? (3)

3.4 Grace takes her grandparents to visit some friends. Her car uses 9,5 litres of petrol per 100km.

3.4.1 Determine the rate in km/litre. (2)

3.4.2 How far can Grace travel with 47,5 litres of petrol? (2)

3.4.3 How many litres of petrol does she need to travel 350km? Give your answer rounded to the next whole kilometre. (2)

[13]