Hillcrest High School

Grade 9

MATHEMATICS P2

NOVEMBER 2025

NAME: _____

GRADE: _____

MARKS: 100

TIME: 2 Hours

EXAMINER: Mrs A. Jugmohan

MODERATOR: Mrs M Woodrow

	Q1	Q2	Q3	Q4	Q5	Total
Total	10	10	34	29	17	100
Marker						
Moderator						

Instructions to the learner:

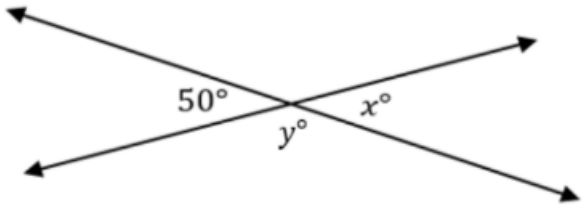
1. Read all the instructions and questions carefully.
2. This paper consists on 5 Questions and 16 pages. Answer all questions.
3. Non-programable scientific calculators may be used.
4. Diagrams are not necessarily drawn to scale.
5. Answer only may not necessarily be awarded full marks.
6. Round all answers off to 2 decimal places unless otherwise stated.

QUESTION 1

Write the correct letter in the grid below.

1	2	3	4	5	6	7	8	9	10

1. In the figure below $x° = 50°$ because they are



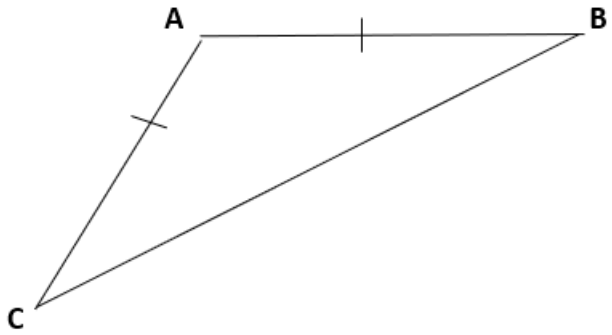
A Alternate angles

B Corresponding angles

C Adjacent angles

D Vertically opposite angles (1)

2. What size are $\widehat{A}$ and $\widehat{B}$ in the triangle drawn below if $A\hat{C}B = 42°$?



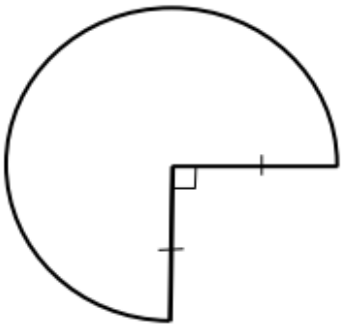
A $\hat{A} = 42°$ and $\hat{B} = 96°$

B $\hat{B} = 69°$ and $\hat{A} = 69°$

C $\hat{A} = 96°$ and $\hat{B} = 42°$

D $\hat{B} = 42°$ and $\hat{A} = 90°$ (1)

3. Given: three quarters of a circle with a radius of 6cm. The area of the shape is:



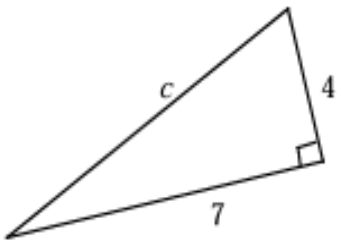
A $\frac{3 \times \pi \times 6^2}{4}$

B $\frac{4 \times \pi \times 12}{3}$

C $\frac{4 \times \pi \times 6^2}{3}$

D $\frac{3 \times \pi \times 12}{4}$ (1)

4. What is the length of the hypotenuse?



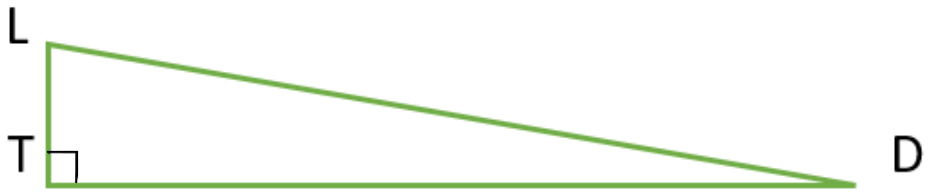
A 11,00

B 9,95

C 8,06

D 3.32 (1)

5. Triangle LTD is a right angled triangle. What is the correct formula?



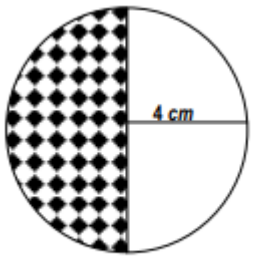
A $LD^2 = TD^2 - LT^2$

B $LT^2 = LD^2 - TD^2$

C $TD^2 = LD^2 + TD^2$

D $LT^2 = LD^2 + TD^2$ (1)

6. In the sketch the circle has a radius of 4 cm. What is the area in cm^2 of the shaded part of this circle?



A 16π

B 8π

C $¾\pi$

D 10π (1)

7. Triangle ABC is an equilateral triangle with $AB = 5cm$. What is the perimeter of triangle ABC?

A $25\ cm^2$

B $15\ cm$

C $25\ cm$

D $15\ cm^3$ (1)

8. Which of the following is the correct definition of the mean in a set of data?

A The most frequently occurring value

B The difference between the highest and lowest values

C The middle value when the data is arranged in order

D The sum of all the values divided by the number of values (1)

9. What is the mode in a data set: 3 , 7 , 3 , 2 , 9 , 3 , 4?

A 2

B 3

C 7

D 4 (1)

10. Which measure of central tendency is most affected by outliers?

A Range

B Mode

C Median

D Mean (1)

[10]

QUESTION 2

True or False. If false, give the correct answer.

2.1. Corresponding angles are equal only when the lines are perpendicular. (2)

_____

_____

2.2. The exterior angle of a triangle is equal to the sum of the two opposite interior angles. (2)

_____

_____

2.3. Theorem of Pythagoras applies to all triangles. (2)

_____

_____

2.4. To find the perimeter of a composite shape, you add the lengths of all its outer sides. (2)

_____

_____

2.5. Area is measured in square units. (2)

_____

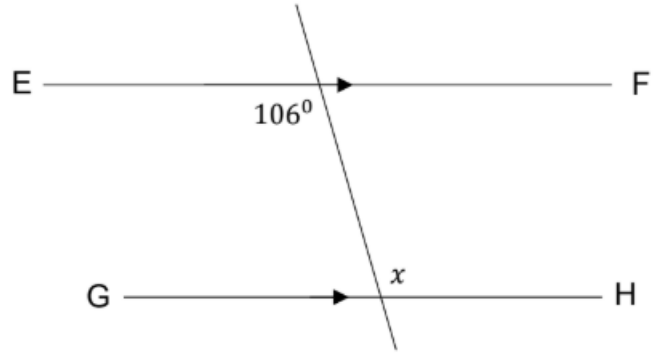
_____

[10]

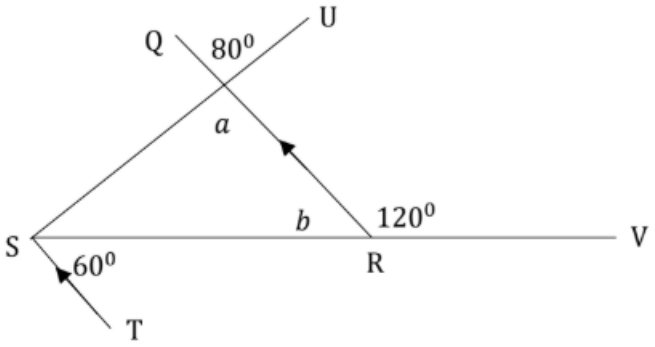
QUESTION 3

In the questions below, find the value of the variables and **give reasons for your answer.**

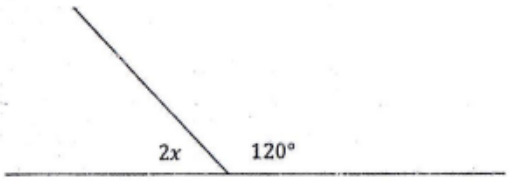
3.1. Determine the value of the variable in the diagram below. Give a reason for your answer. (2)



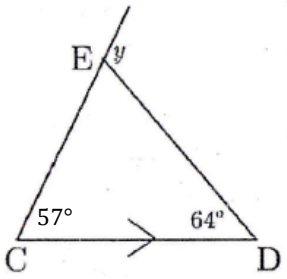
3.2. Determine the value of a and b in alphabetical order. (4)



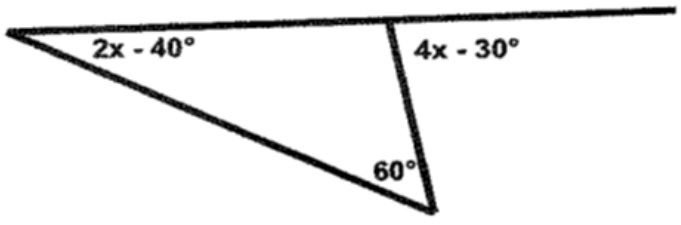
3.3. Calculate the value of x (3)



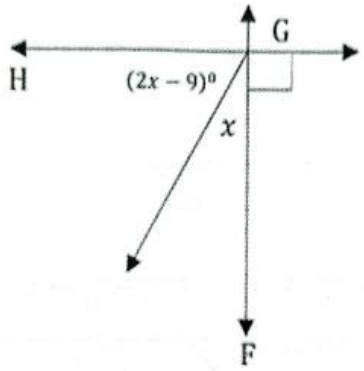
3.4. Calculate y: (2)



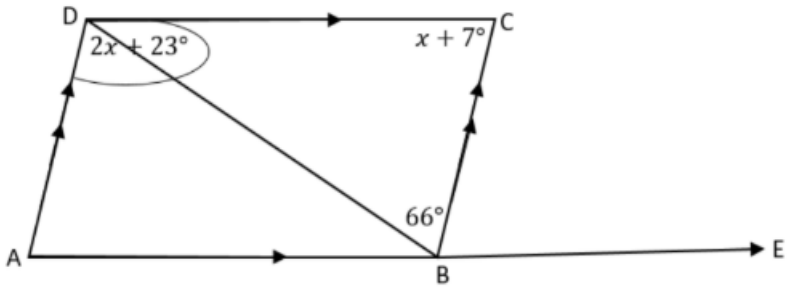
3.5. Determine the value of x in the figure below. (3)



3.6. In the diagram below, $FG \perp GH$. Find the value of x (3)



3.7. ABCD is a parallelogram with diagonal BD. AB is extended to E. $A\hat{D}C = 2x + 23$, $D\hat{B}C = 66°$. Study the diagram and answer the questions that follow.

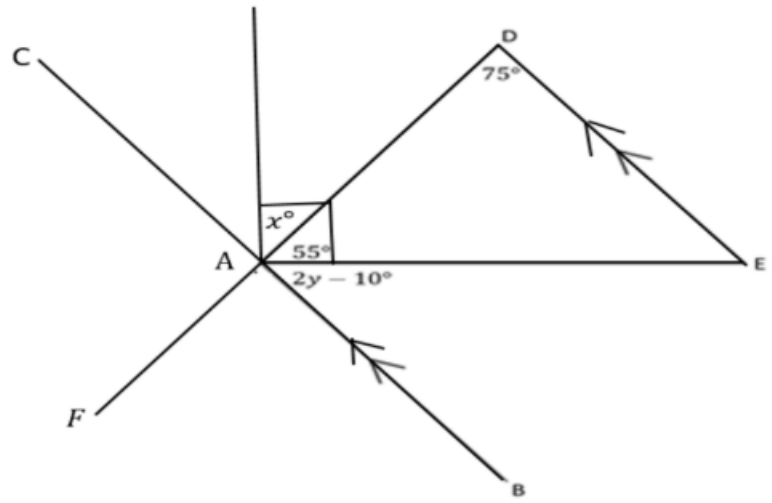


3.7.1. Calculate the value of x. (4)

3.7.2. Calculate the size of $C\hat{D}B$ (3)

3.7.3. Determine the size of $A\hat{D}B$ (2)

3.8. Read the figure below and answer the questions that follow.



3.8.1. Calculate the size of $x°$. (2)

3.8.2. Determine the value of y. (4)

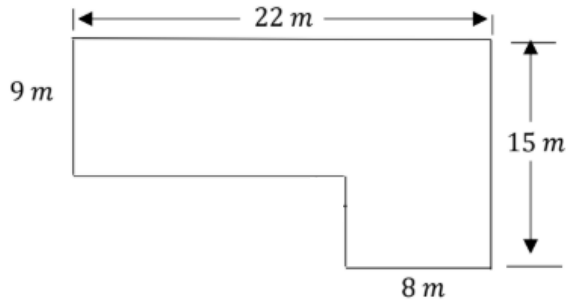
3.8.3. Hence, find the size of DÂB (2)

[34]

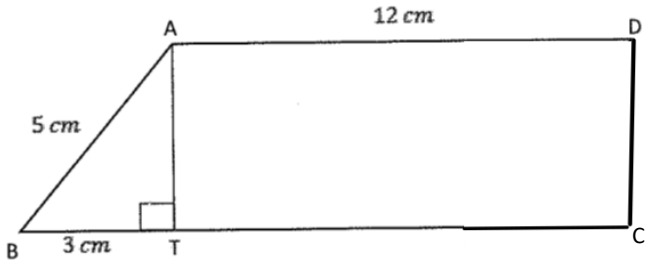
QUESTION 4

4.1. Convert $1{,}12km^2$ to m^2 (2)

4.2. Calculate the perimeter of the below figure. (3)



4.3. In Quadrilateral ABCD , AB = 5 cm , AD = 12 cm , BT = 3 cm and $AT \perp BC$.



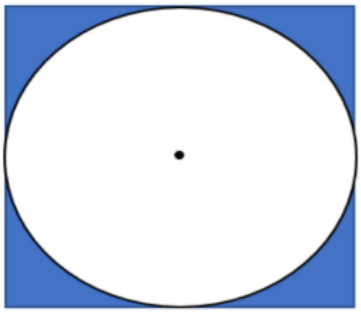
4.3.1. Calculate the length of AT (3)

4.3.2. Calculate the perimeter of figure ABCD (2)

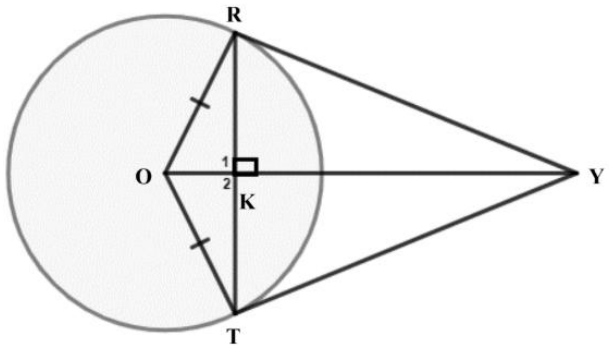
4.3.3. Calculate the area of figure ABCD (3)

4.4. A circle has an area of $96cm^2$. Find the length of the diameter rounded off to 2 decimal places. (4)

4.5. In the figure below, the circle is enclosed in a shaded square with the length of the side = 6 cm. Calculate the area of the shaded part. Round off your answer to the nearest whole number. (5)



4.6. In the diagram below, O is the centre of the circle with radius = 5 cm. $RT \perp OY$, RT = 8 cm and OY = 12 cm.



4.6.1. Calculate the circumference of the circle (3)

4.6.2. Calculate the length of KY. (4)

[29]

QUESTION 5

A class of 20 students wrote a mathematics test out of 50 marks. Their scores are recorded below:

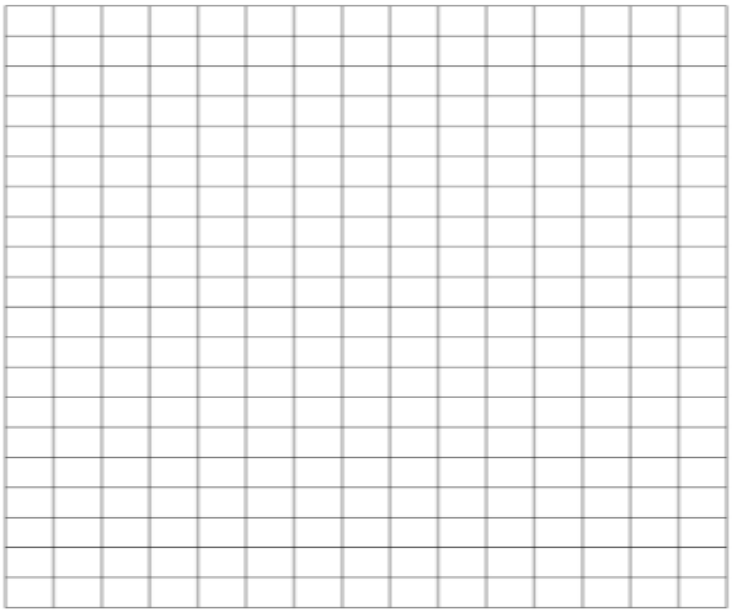
9, 22, 20, 40, 43, 28, 12, 32, 33, 50,

35, 50, 25, 45, 46, 30, 49, 35, 38, 50

5.1. Organize the data using a frequency table (4)

Interval	**Tallies**	**Frequency**
0 – 10		
11 – 20		
21 – 30		
31 – 40		
41 – 50		

5.2. Draw a Histogram on the graph below to represent the data. (4)



5.3. Calculate the:

5.3.1. Mean (3)

5.3.2. Median (3)

5.3.3. Mode (1)

5.3.4. Range (2)

[17]

The end

Total: 100 marks