HILLCREST HIGH SCHOOL

Grade 8 Mathematics Exam
Paper 2
November 2017

MARKS: 90 **TIME: 1 hour**

NAME:								CLASS:			
TEACHER:								DATE:			
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	TOTAL	GRAND TOTAL	%
10	6	11	6	10	4	25	10	8	90	240	

INSTRUCTIONS

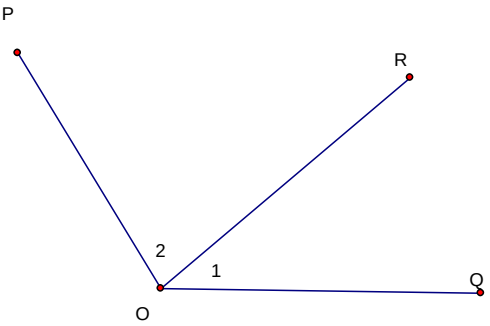
1. **This question paper consists of 9 questions. Answer ALL the questions.**
2. **You may use an approved calculator (non-programmable and non-graphical), unless stated otherwise.**
3. **Show ALL calculations clearly.**
4. **Round off ALL final answers to TWO decimal places, unless stated otherwise.**
5. **Indicate units of measurement, where applicable.**
6. **Maps and diagrams are NOT necessarily drawn to scale, unless otherwise stated.**
7. **Write neatly and legibly.**

QUESTION 1: Multiple Choice

For each of the following questions, there is only one correct answer. Fill in the correct letter in the grid below:
Eg. 1.11 C

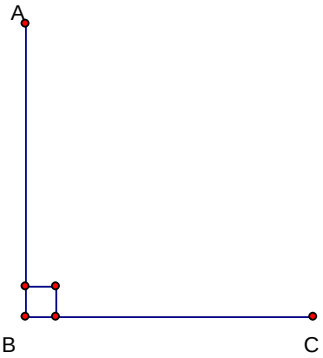
1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	1.10

1.1 $\hat{O}_1$ and $\hat{O}_2$ are



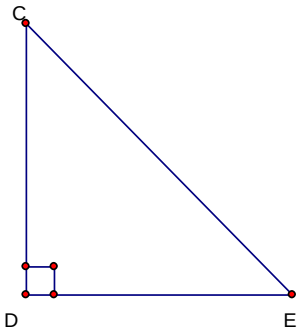
A vertically opposite angles
B complementary angles
C supplementary angles
D adjacent angles (1)

1.2 $\hat{B}$ is



A an obtuse angle
B a right angle
C a straight angle
D a revolution (1)

1.3 In ΔCDE is



A $CE = CD + DE$
B $CD^2 + DE^2 = CE^2$
C $CD^2 = CE^2 + DE^2$
D $DE^2 = CD^2 + CE^2$ (1)

1.4 The sum of the interior angles of a triangle is equal to

A $360°$
B $90°$
C $180°$
D $270°$ (1)

1.5 The exterior angle of a triangle is equal to

A the opposite interior angle
B the adjacent angle
C the sum of the interior angles
D the sum of the opposite interior angles (1)

1.6 Which of the following quadrilaterals have diagonals that are perpendicular to each other.

A Kite
B Parallelogram
C Rectangle
D Trapezium (1)

1.7 Determine the perimeter of a square ABCD, if CD = $t + 4$

A $t^2 + 16$
B $4t + 16$
C $16t + 16$
D $t + 4$ (1)

1.8 The area of a circle between the circumference and a chord, is called a ……

A Arc
B Sector
C Semi-circle
D Segment (1)

1.9 A quadrilateral with its opposite sides both equal and parallel to each other and interior angles $\neq 90°$ is called a ….

A Square
B Rectangle
C Parallelogram
D Kite (1)

1.10 What is the sum of adjacent supplementary angles?

A $360°$
B $180°$
C $90°$
D $270°$ (1)

[10]

QUESTION 2: FILL IN THE BLANKS

Complete the following, by writing in the correct answer in the gap provided:

2.1 An acute angle is an angle between _____˚ and _____˚ (2)

2.2. An angle of 95˚ is an _____ angle. (1)

2.3 In a right-angled triangle, the longest side is called the _____. (1)

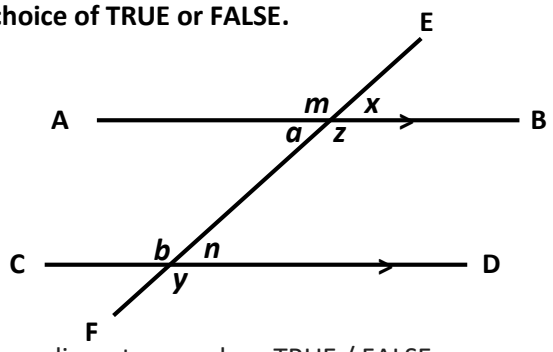
2.4 In a triangle, the longest side is always opposite the _____ angle. (1)

2.5 The sum of all the angles round a point add up to _____° (1)

[6]

QUESTION 3: TRUE or FALSE

Refer to the drawing below and answer True or False to each of the questions that follow. **Reasons must be given for all your answers, circle your choice of TRUE or FALSE.**



3.2.1 ∠b and ∠z form complimentary angles. TRUE / FALSE

Reason: _____ (2)

3.2.2 180° - ∠b = ∠a TRUE / FASLE

Reason: _____ (2)

3.2.3 ∠m = ∠z = ∠b TRUE / FALSE

Reason 1: _____

Reason 2: _____ (3)

3.2.4 Line FE is called a transversal TRUE / FALSE

Reason: _____ (2)

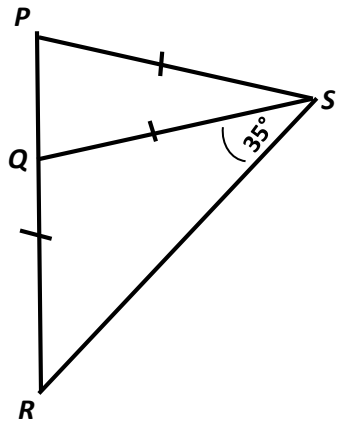
3.2.5 ∠n = ∠z TRUE / FALSE

Reason: _____ (2)

[11]

QUESTION 4:

4.1 Use the triangle below to answer the questions that follow. Reasons for all your answers must be given.



4.1.1 Determine the size of $\widehat{R}$ =_____ (_____) (2)

4.1.2 Calculate the size of $P\hat{Q}S$ = _____

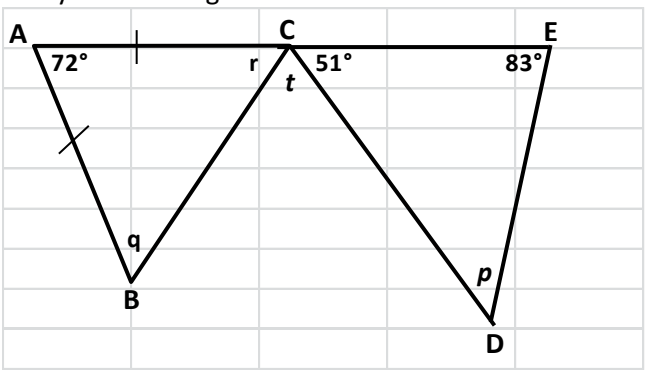
(_____) (2)

4.1.2 If QR = 7cm, determine PS. PS = _____ (_____) (2)

[6]

QUESTION 5:

5.1 Study the drawing shown below:



5.1.1 Calculate, with reasons, the size of each of the angles at:

5.1.1 p = _____ (_____) (2)

5.1.2 q = _____(_____)

_____(_____)

_____ (4)

5.1.3 t = _____ (_____) (2)

5.1.2 What type of triangle is ΔCDE? According to it's angles: _____

According to it's sides: _____ (2)

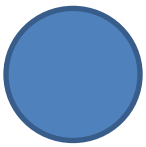
[10]

QUESTION 6: MATCH THE COLUMNS

Match the shape in Column A with the correct Area formulae for that shape in Column B.

Write the correct letter of the formula in the question boxes below: Eg. 6.7 ____f)_____

6.1	6.2	6.3	6.4

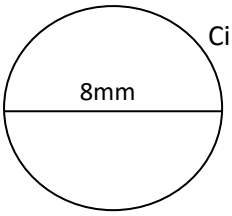
COLUMN A	COLUMN B
6.1 	**a)** $Area = \pi r^2$
6.2 	**b)** $Area = s^2$
6.3 	**c)** $Area = \frac{1}{2} \times b \times h$
6.4 	**d)** $Area = l \times b$

[4]

QUESTION 7:

Determine the perimeter **AND** area of the following shapes: (Show all necessary working, use the mark allocation as a guide)

7.1



Circumference = _____

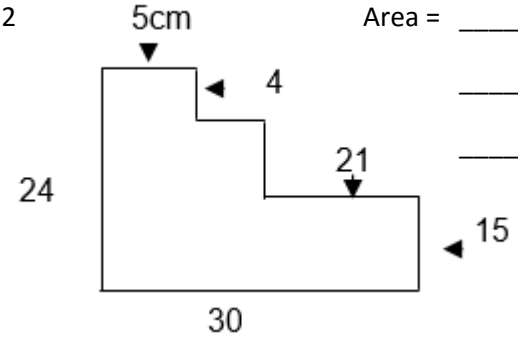
_____ (2)

Area = _____

_____

_____ (3)

7.2



Area = _____

_____

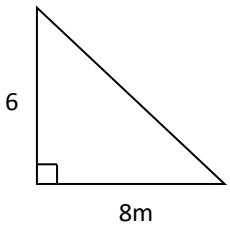
_____ (4)

Perimeter = _____

_____

_____ (3)

7.3



Area = _____

_____ (3)

Perimeter = _____

_____

_____ (5)

7.4 A bicycle tyre has a radius of 30**cm**.

7.4.1 How far does a the bicycle travel after one full turn of the wheel _____

_____ (2)

7.4.2 How far does the bicycle travel, **in km**, if the wheel turns 5000 times?

_____

_____

_____ (3)

[25]

QUESTION 8:

8.1 Fill in the missing units that would be most appropriate for measuring the object stated:

8.1.1 A 340 _____ can of coke.

8.1.2 A wooden dining room table has an approximate mass of 28 _____.

8.1.3 The mass of a Maths textbook is 625 _____.

8.1.4 The door is 2 _____ high and 8000 _____ wide. (5)

8.2.1 How many 275 ml juice bottles can be filled from a 2 litre bottle?

_____

_____

_____ (3)

8.2.2 How many millilitres will be left over (from 8.3.1)?

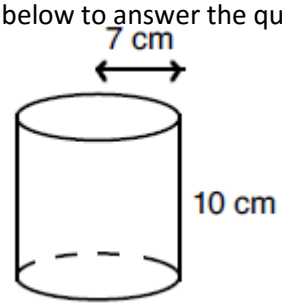
_____

_____ (2)

[10]

QUESTION 9:

Use the diagram below to answer the question that follow:



9.1 Calculate the volume of the prism.

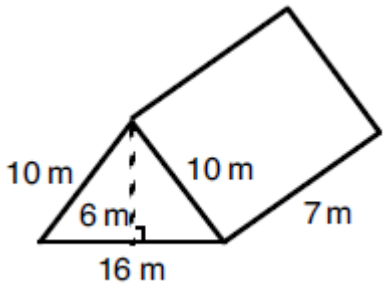
_____

_____

_____ (3)

9.2 What is the volume in mm^3? _____ (2)

9.3 Calculate the volume of the triangular prism below:



_____

_____

_____

_____ (3)

[8]