HILLCREST HIGH SCHOOL

Grade 8 Exam
November 2015
Calculator Paper

Examiner: A. Sparks

MARKS: 125 TIME: 2 hour

INSTRUCTIONS

1. This paper consists of 9 pages including the cover sheet.
2. Answer all questions on the paper provided.
3. You may not share calculators with anyone during the exam.
4. Round all answers off correctly to 2 decimal places unless otherwise stated.
5. Write your teacher's name on the top of your answer paper.
6. Number your answers correctly according to the numbers used in this question paper.
7. Show all working out.
8. Draw double margins.
9. It is in your best interest to set your work out neatly and legibly

Question 1:

Write down the letter of the correct option for each of the following questions:

1.1. A prime number has only two factors, the number 1 and the number itself. Which of these is a prime number?

A.	5	**B.**	6
C.	9	**D.**	10

1.2. $\frac{5}{8}$ of R240 is:

A.	R180	**B.**	R120
C.	R150	**D.**	R200

1.3. If I score 16 marks in a test out of 40 marks, what percentage mark did I score?

A.	40%	**B.**	32%
C.	48%	**D.**	16%

1.4. If 75% of a number is 90, what is 50% of the same number?

A.	45	**B.**	120
C.	75	**D.**	60

1.5. How long will it take to drive 120 km at a constant speed of 80 km per hour?

A.	40 min	**B.**	1hr 30min
C.	1hr 20 min	**D.**	1hr 40 min

1.6. If $x^2 = 36$; then $x =$

A.	6 or −6	**B.**	−6 only
C.	6 only	**D.**	36

1.7. If $\sqrt[3]{x} - 3 = 0$; then $x =$

A.	3	**B.**	9
C.	−3	**D.**	27

[7]

Question 2:

Write the following in exponential form:

2.1 $2 \times 2 \times 2 \times 2 \times 2$ (1)

2.2 $3y \times 3y \times 3y$ (1)

2.3 $(1 + 0{,}9) \cdot (1 + 0{,}9) \cdot (1 + 0{,}9)$ (2)

[4]

Question 3:

State whether the following statements are TRUE or FALSE, if FALSE, give the correct answer.

3.1 $a \times b \times (3+2) = 5ab$

3.2 $2y + x = 2yx$

3.3 $x \times (1+5) \times y = 6 + xy$

3.4 $3z + y + x$ is in its simplest form.

3.5 $7 + 8b \div 2 = 9 + 8b$ [7]

Question 4:

Simplify the following expressions.

4.1 $3x(x-1)$ (2)

4.2 $2(m-5) - 5(2m-4)$ (4)

4.3 $\frac{3x^5yz^2 + 12xy^6z^3}{2x^2yz^3}$ (3)

4.4 $\sqrt{-2x^2y^3 \times (-8x^2y)^3}$ (3)
[12]

Question 5:

Solve for the unknown variable in each of the following:

5.1 $2x + 5 = x - 2$ (2)

5.2 $2(x+4) = -4(6-x)$ (4)

5.3 $\frac{2y+4}{3} = 8$ (3)

5.4 The length of a rectangle is $3x$ cm and its breadth is x cm. If the perimeter of the rectangle is 80cm, what is the length and breadth of the rectangle? (3)
[12]

Question 6:

6.1 Use your protractor to measure the angle below (there is a cut-out protractor at the back of the paper if you need one)

(2)

6.2 What type of angle is this? (1)

[3]

Question 7:

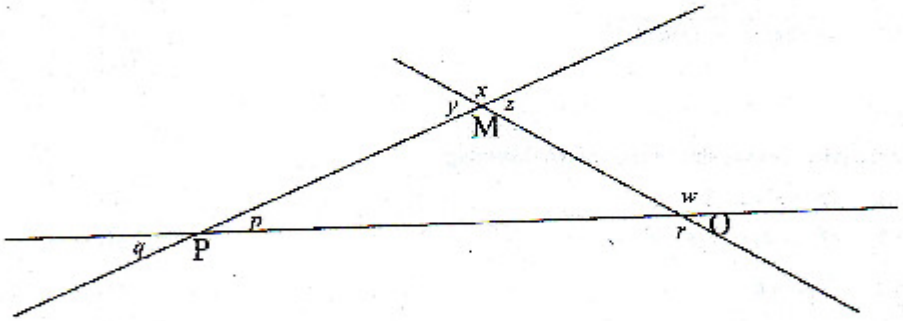
In the figure below name, from the angles marked with small letters, name:

7.1 all the acute angles

7.2 the obtuse angles

7.3 supplementary adjacent angles

7.4 vertically opposite angles



[8]

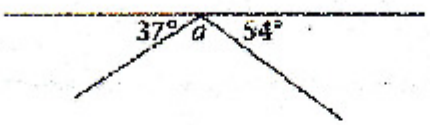
Question 8:

Find the size of the missing angles in each of the following, give reasons for your answers.

8.1

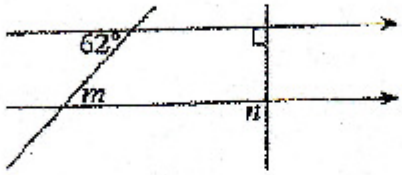
(3)

8.2



(3)

8.3



(4)
[10]

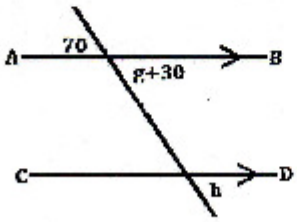
Question 9:

For the diagrams below, find the value the angles marked with small letters. Give reasons for your answer.

9.1

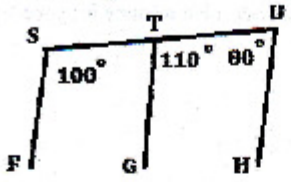
(4)

9.2



(5)

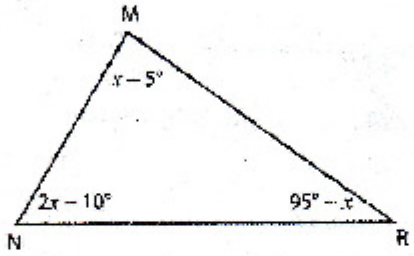
9.3 For the diagram below which pair of lines are parallel? Give a reason.



(2)
[11]

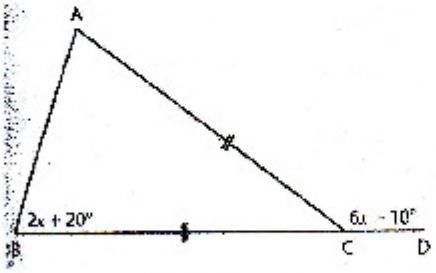
Question 10:
Find the value of x in the diagrams below. Provide reasons for your answers.

10.1



(4)

10.2

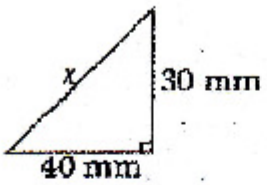


(5)
[9]

Question 11:

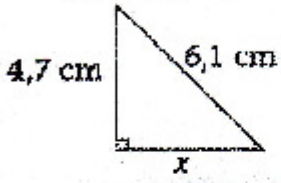
Find the value of x in each of the following, to 1 decimal place where appropriate:

11.1



(3)

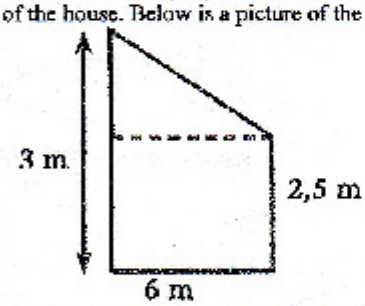
11.2



(4)
[7]

Question 12:

Noluthando is helping her father paint their house. She is going to paint one wall on the side of the house. Below is a picture of the shape of the wall on the side of their house:

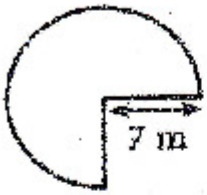


12.1 Calculate the area of the wall. (4)

12.2 If one tin of paint covers $6m^2$, how many tins will she need for this wall? (2)
[6]

Question 13:

Use the diagram below to find the following:



13.1 Determine the area of the enclosed shape. (3)

13.2 Determine the perimeter of the enclosed shape. (3)
[6]

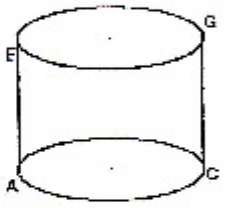
Question 14:

Calculate the volume of each of the following shapes to 1 decimal place where necessary:

14.1

AB = 12 cm ; BC = 5 cm ; CG = 10 cm

14.2



Radius = 8mm ; AE = 8 mm
[5]

Question 15:

Warren is flying his model aeroplane on a line. He stands in one spot and the aeroplane flies around him in a circle. If the plane flies 754 m in completing 8 circuits (circles), calculate, to the nearest metre, the length of the line. (Ignore the length of Warren's arm.) Show all working details. [5]

Question 16:

16.1 The following scores are provided for 10 people who played a computer game:

60; 65; 60; 54; 65; 72; 45; 66; 67; 60

16.1.1 Draw a stem and leaf to represent the data. (2)

16.1.2 Give the mode of the data. (1)

16.1.3 Determine the median. (2)

16.1.4 What percentage of people scores below the median? (1)

16.1.5 Determine the mean. (3)

16.2 David's maths average (mean) after 4 tests is 72%. He gets 85% for his fifth test. What is his new average? (4)
[13]

Cut-out protractor for Question 6.1