

Time 1  $\frac{1}{4}$  hours

170 Copies

This question paper consists of TWO printed pages.  
Write your name clearly on ALL sheets of paper used.  
All of the questions are to be attempted.  
Calculators are NOT allowed.  
All working **MUST** be shown.  
Number your answers carefully and do **NOT** do questions beside one another.  
The number of marks awarded to each question is indicate in square brackets.

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**SECTION A**

Complete the following sentences. Write your answers on the foolscap.

1. If  $P = \{5,6,7,8\}$  and  $Q = \{2,4,6,8\}$  then  $P \cap Q =$  \_\_\_\_\_ [1]
2.  $5^2 - 3^2$  in its simplest form is \_\_\_\_\_ [2]
3. Which one of these quadrilaterals has its opposite sides equal and parallel?  
a) Kite                      b) Rhombus                      c) Rectangle                      d) Trapezium [1]
4.  $\frac{1}{5}$  expressed as a percentage is \_\_\_\_\_ [1]
5. Write  $\frac{3}{8}$  as a decimal \_\_\_\_\_ [1]
6.  $15.2 \div 0.01 =$  \_\_\_\_\_ [3]
7.  $t$  is a number such that  $t \in W$  and  $t \notin N$  then  $t$  is the number \_\_\_\_\_ [1]
8.  $2\frac{3}{4} + 3\frac{5}{8} =$  \_\_\_\_\_ [3]
9. 49825 to 2 significant figures is \_\_\_\_\_ [1]
10. 98.052 to 1 decimal place is \_\_\_\_\_ [1]

**Total 15 marks**

**PLEASE TURN OVER**

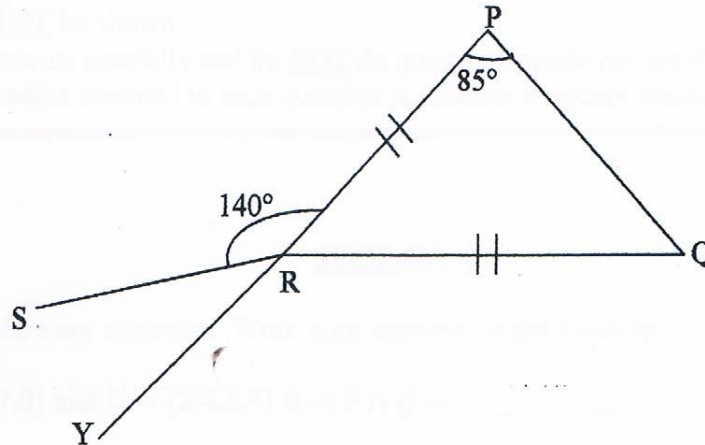
**SECTION B**

1. \$105.00 is divided among 3 friends in the ratio 3: 5: 7. How much is the largest share. [3]
2. a) A seamstress charges \$225 to sew a dress but gives a discount of 9% for cash. Calculate the cash price? [2]  
b) The cost price of an article is \$95. In selling the article a shopkeeper made a profit of 20%. What is the selling price? [2]
3. Simplify as far as possible
- |                       |                              |
|-----------------------|------------------------------|
| a) $7x - 3y + 2x - y$ | c) $(-p)^2 \times (-q)^3$    |
| b) $2a^2 + (3a)^2$    | d) $6 + (2m \div 2) + 8$ [8] |
4. Solve the following equations. Show ALL steps.
- |                |                     |
|----------------|---------------------|
| a) $x + 3 = 8$ | c) $3y + 7 = 13$    |
| b) $4x = 20$   | d) $7 - h = h$ [10] |
5. a) If  $p = 5$ ,  $q = 0$  and  $r = -3$ , calculate the value of
- |                  |  |
|------------------|--|
| i. $4p - qr$ [3] |  |
| ii. $2r^3$ [2]   |  |
- b) A rectangle with perimeter  $46\text{ cm}$  has sides of lengths 8cm and  $3x$  cm. What is the value of  $x$ ? [3]
6. a) A universal set, U, is defined as  $U = \{15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25\}$ . Sets M and N are subsets of U such that  $M = \{\text{prime numbers}\}$  and  $N = \{\text{even numbers}\}$ .
- |   |  |
|---|--|
| i. List the members of sets M and N. [2]                      |  |
| ii. Draw a Venn diagram to represent the sets M, N and U. [4] |  |
| iii. List the elements of the set $(M \cup N)'$ . [1]         |  |

**PLEASE TURN OVER**

- b) A square has the same area as a parallelogram with height 6 cm and base 24 cm. What is the length of the side of the square? [3]

7.



In the diagram above, **not drawn to scale**,  $\angle PRS = 140^\circ$ ,  $\angle RPQ = 85^\circ$  and  $PRY$  is a straight line. Find the following angles and give reasons for your answers.

- a.  $\angle PQR$                       b.  $\angle PRQ$                       c.  $\angle SRY$  [10]
8. At a career guidance seminar a survey was done to find out the type of careers that Form 5 students were likely to choose. The results are shown in the table below.

Career	Lawyer	Teacher	Doctor	Artist	Salesperson
Number of students	240	189	$t$	216	330

There were 1080 students surveyed.

- a) Calculate the value of  $t$ , the number of students who were interested in becoming doctors. [2]
- b) The data above are to be represented on a pie chart. Calculate the size of the angle in each sector of the pie chart. [5]
- c) Using a circle of radius 4 cm, construct the pie chart to represent the data. [7]

**Total 67 marks**

**END OF EXAM**