

ICSE
Class VIII
Mathematics
Sample Paper 2

Time: 2 hr 30 min

Total Marks: 80

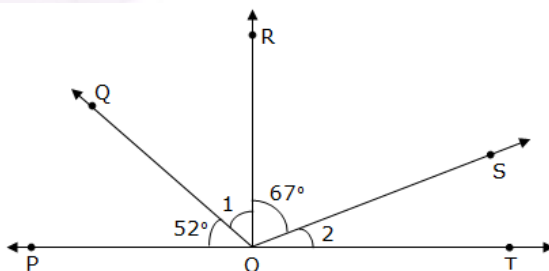
General Instructions:

1. Answers to this paper must be written on the paper provided separately.
2. You will not be allowed to write during the first **15 minutes**.
3. This time is to be spent in reading the question paper.
4. The time given at the head of this paper is the time allowed for writing the answers.
5. Attempt **all** questions from **Section A**. Solve any **four** questions from **Section B**.
6. **All working, including rough work, must be clearly shown and must be done on the same sheet as the rest of the answer.**
7. **Omission of essential working will result in loss of marks.**
8. The intended marks for questions or parts of questions are given in brackets [].

Section A (40 marks)

Question 1

- (a) Do the ratios 30 cm to 4 m and 20 sec to 6 minutes form a proportion? [3]
- (b) If RO is perpendicular to PT, find the measure of angles 1 and 2 in the figure below: [3]



- (c) Simplify: $\frac{7\sqrt{3}}{\sqrt{6}-\sqrt{3}} - \frac{2\sqrt{5}}{\sqrt{8}+\sqrt{2}}$ [4]

Question 2

- (a) The sum of two numbers is 55 and their H.C.F. and L.C.M. are 5 and 120 respectively, then, find the sum of the reciprocals of the numbers. [3]

- (b) If the product of two positive consecutive even integers is 168, find the integers. [3]
- (c) A's income is 60% more than that of B. By what percent is B's income less than A's? [4]

Question 3

- (a) In a parallelogram ABCD, if its area is 20 cm^2 , find the area of ΔABC and the distance between the sides AB and CD, if $AB = 5 \text{ cm}$. [3]
- (b) Given: $A = \{1, 2, 3\}$, $B = \{3, 4\}$, $C = \{4, 5, 6\}$, find $(A \times B) \cap (B \times C)$. [3]
- (c) Simplify: $\frac{(2x^2y^3)^5 \times (2x^2y^2)^3}{(5x^4y)^6}$ [4]

Question 4

- (a) Find the square root of $5\frac{19}{25}$. [3]
- (b) Find the fraction which becomes $\frac{1}{2}$ when its numerator is increased by 6 and is equal to $\frac{1}{3}$ when its denominator is increased by 7. Find the fraction. [3]
- (c) The table below classifies the days of the months of June, July and August according to the rainfall received in a locality. [4]

Rain (mm)	Days
10 - 20	8
20 - 30	10
30 - 40	14
40 - 50	20
50 - 60	15
60 - 70	8
70 - 80	7
80 - 90	6
90 - 100	4

Draw a histogram for this data.

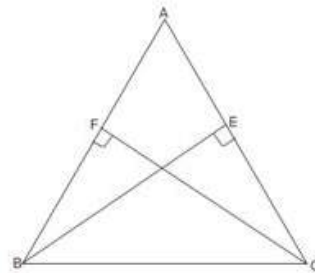
Section B (40 Marks)

Question 5

(a) Evaluate: $5 + 6 - 3 \times (2 + 70) - \frac{50}{2} + (3 + 7 \times 2 - 9)$ [3]

(b) Draw a circle of radius 2.5 cm. Show and define minor and major segments. [3]

(c) In $\triangle ABC$, BE and CF are altitudes on the sides AC and AB respectively such that BE = CF. Prove that AB = AC. [4]



Question 6

(a) Raj covered a certain distance in 6 hours. He covered some part of the journey by bus at 30 km/h and the remaining part of the journey by train at 50 km/h. Find the distance covered for the entire journey. [3]

(b) Simplify: $\frac{x^2 - 3x - 10}{x^2 - x - 20} \times \frac{x^2 - 2x + 4}{x^3 + 8}$ [3]

(c) Draw triangle according to the following measures: [4]
 $\triangle DEF$: $l(DE) = l(DF) = 6$ cm, $m\angle D = 40^\circ$

Question 7

(a) How much compound interest is earned on Rs. 18,000 at 7% interest rate for 1 year? [3]

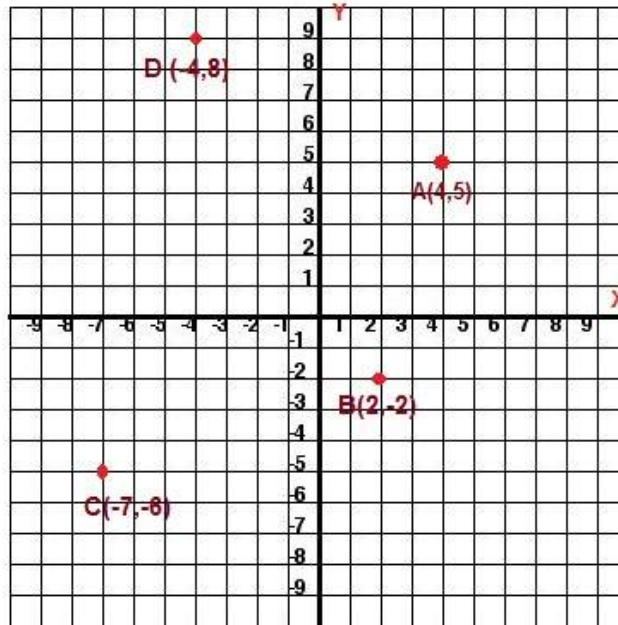
(b) Make d as the subject of the formula: $S = \frac{n}{2} \{2a + (n - 1)d\}$ [3]

(c) The surface area of a cuboidal wooden box is 470 cm^2 . If its length and breadth are 15 cm and 8 cm respectively, find its height. [4]

Question 8

(a) Simplify: $20x - [15x^3 + 5x^2 - \{8x^2 - (4 - 2x - x^3) - 5x^3\} - 2x]$ [3]

- (b) Write down the co-ordinates of the images for the points plotted in the graph.
- Point A and Point D reflected in the x-axis. [3]
 - Point B and Point C reflected in the y-axis.



- (c) The marks obtained by the students in a class test are given below: [4]
 31, 12, 28, 45, 32, 16, 49, 12, 18, 26, 34, 39, 29, 28, 25, 46, 32, 13, 14, 26,
 25, 34, 23, 23, 25, 45, 33, 22, 18, 37, 26, 19, 20, 30, 28, 38, 42, 21, 36, 19,
 20, 40, 48, 15, 46, 26, 23, 33, 47, 40.
- Taking class intervals 10-15, 15-20, 45-50; construct a frequency table.

Question 9

- (a) Find the sum of the interior angles of a polygon of: [3]
- 6 sides
 - 8 sides
 - 13 sides
- (b) The area of a trapezium is 105 cm^2 and its height is 7 cm. If one of the parallel sides is longer than the other by 6 cm. Find the two parallel sides. [3]
- (c) A and B are two sets such that $n(A - B) = 32 + x$, $n(B - A) = 5x$ and $n(A \cap B) = x$. Illustrate the information by means of a Venn-diagram. [4]
- Given that $n(A) = n(B)$, calculate
- the value of x .
 - $n(A \cup B)$