



Silver Grove School

SAMPLE PAPER -I (2025-26)

Mathematics

IX- A

Time-3hrs.

Maximum Marks-80

Instructions:

- The time given at the head of this Paper is the time allowed for writing the answers.
- Attempt all question from Section A and any four questions from Section B.
- All working, including rough work, must be clearly shown, and must be done on the same sheet as the rest of the answer.
- Omission of essential working will result in loss of marks.
- The intended marks for questions or parts questions are given in brackets []

SECTION A [40 MARKS]

Q1 Choose the right option only.

[15 marks]

1A If $a^2 - 5a + 1 = 0$ then $a + \frac{1}{a} = \dots$

- (i) 5 (ii) 10 (iii) 15 (iv) 20

1B If $x^2 + \frac{1}{x^2} = 2$ then value of $x + \frac{1}{x} \dots\dots\dots$

- (I) 4 (ii) 2 (iii) 6 (iv) 0

1C If value of $a+b+c = 0$ then value of $a^3 + b^3 + c^3 - 3abc$ is

- (I) 1 (ii) 10 (iii) 0 (iv) none of these

1D An altitude divide each other in ratio of

- (i) 2:1 (ii) 1:2 (iii) 2:3 (iv) none of these

1E Sum of exterior angles of a polygon is

- (i) 360° (ii) 180° (iii) vary as no of sides vary (iv) Can not be calculated

1F If the number of sides in a regular polygon is 12, then what will be the measure of each of its exterior angles?

- (I). 30° (ii) 48° (iii) 40° (iv) 36°

1G.If the measure of each interior angle of a regular polygon is 150° , then the number of its diagonals will be

- (i). 54 (ii). 27 (iii) 15 (iv). 12

1H If E, F, G and H are the mid-points of the sides of a parallelogram ABCD, respectively, then ar (EFGH) is equal to:

- (I) $\frac{1}{2} \text{ar(ABCD)}$ (ii). $\frac{1}{3} \text{ar (ABCD)}$ (iii) 2ar(ABCD) (iv). ar(ABCD)

II A median of a triangle divides it into two

- (I). Congruent triangles (ii). Isosceles triangles
(iii) Right triangles (iv) Equal area triangles

1J In a triangle ABC, E is the mid-point of median AD. Then:

- (I). $\text{ar(BED)} = \frac{1}{4} \text{ar(ABC)}$ (ii). $\text{ar(BED)} = \text{ar(ABC)}$
(iii). $\text{ar(BED)} = \frac{1}{2} \text{ar(ABC)}$ (iv) $\text{ar(BED)} = 2 \text{ar(ABC)}$

1K If a triangle and a parallelogram are on the same base and between same parallels, then the ratio of the area of the triangle to the area of the parallelogram will be:

- (I). 1:2 (ii). 3:2 (iii) 1:4 (iv). 1:3

1 LThe distance between the origin and the point: (-8, 6) (I) 10 units (II) 15 units (III) 20 units (IV) 25 units

1M Value of $\tan 10^\circ \tan 15^\circ \tan 75^\circ \tan 80^\circ$ is

- (I) 10 (II) 75 (III) 1 (IV) 15

1N If the median of the following observations, arranged in ascending order, is 20. Then what is the value of x. 3, 4, 7, 8, 10, 18, $x + 2$, $x + 4$, 26, 28, 31, 36, 38 and 40.

- (I) 15 (II) 17 (III) 19 (IV) 21

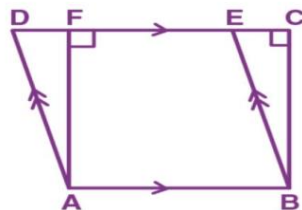
1 O. Total sum of angle of a polygon of 10 sides will be

- (I) 1260° (II) 1230° (III) 1200° (IV) none

Q2 A.. In a polygon there are 5 right angle and the remaining angles are equal to 195° each. Find the number of sides in the polygon. [4]

.Q2.B. In the given figure, if area of triangle ADE is 60 cm^2 , state, given reason, the area of: [4]

- (i) Parallelogram ABED (ii) Rectangle ABCF (iii) Triangle ABE



Q 2 C. Find the compound interest, on ₹2,400 for 2 years at 5 per cent per annum. [4]

Q3 A If $a^2 + b^2 + c^2 = 50$ and $ab + bc + ca = 47$, find $a + b + c$. [4]

Q3 B factories the following [4]

I $3x^2 + x - 10$

II Insert 5 irrational numbers between $2\sqrt{5}$ and $3\sqrt{3}$.

Q 3 C. A ladder 13 m long rests against a vertical wall. If the foot of the ladder is 5 m from the foot of the wall, find the distance of the other end of the ladder from the ground. [5]

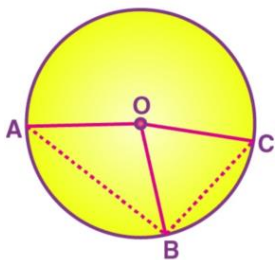
SECTION B [40 MARKS]

(Attempt any four)

4 A. In the given figure, the lengths of arcs AB and BC are in the ratio 3:2. If $\angle AOB = 96^\circ$, find: [3]

(i) $\angle BOC$

(ii) $\angle ABC$

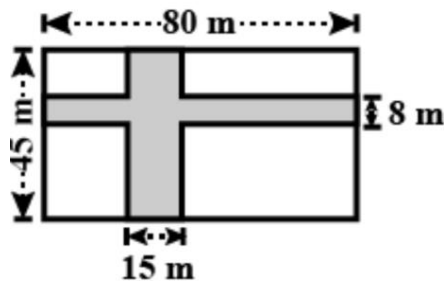


4B. Construct a frequency polygon for the following distribution: [3]

Class intervals	Frequency
0 – 4	4
4 – 8	7
8 – 12	10
12 – 16	15
16 – 20	11
20 – 24	6

4C. The diagonals of a rhombus are 16 cm and 12 cm, in length. Find the side of the rhombus in cm. [4]

5 A. The diagram, given below, shows two paths drawn inside a rectangular field 80 m long and 45 m wide. The widths of the two paths are 8 m and 15 m as shown. Find the area of the shaded portion. [3]



5 B. Given: $5\cos A - 12\sin A = 0$ evaluate : $\frac{(\sin A + \cos A)}{(2\cos A - \sin A)}$ [3]

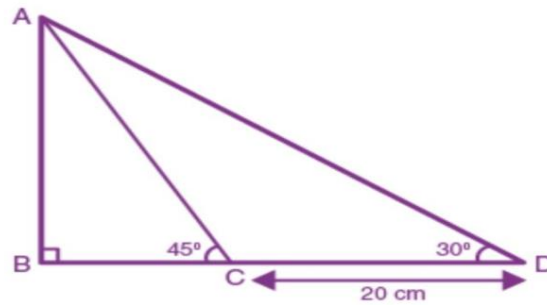
5C. Find the magnitude of angle A, if: [4]

(i) $2\sin A \cos A - \cos A - 2\sin A + 1 = 0$

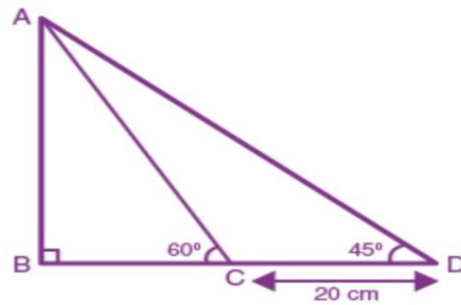
(ii) $2\tan 3A \cos 3A - \tan 3A + 1 = 2\cos 3A$

6 A. Find AB and BC [3]

(i)



(iii)



6B. Find the slope and the y-intercept of the lines: [3]

(i) $4x - 3y = 2$

(ii) $3x + 2y = 6$

6C Solve the given equations graphically: $3x - 2y = 4$ and $5x - 2y = 0$ [4]

7 A. Find the co-ordinates of the points on the y-axis, which are at a distance of 10 units from the point $(-8, 4)$ [3]

7B Evaluate: [3]

. Evaluate :

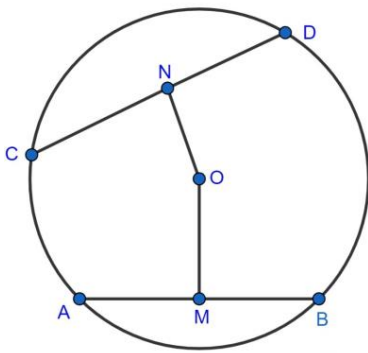
(I) $\frac{2 \tan 57^\circ}{\cot 23^\circ} - \frac{\cot 70^\circ}{\tan 20^\circ} - \sqrt{2} \cos 45^\circ$

(II) $\frac{\cos 70^\circ}{\sin 20^\circ} - \frac{\cos 59^\circ}{\sin 31^\circ} - 8 \sin^2 30^\circ$

7 C. In the given figure, O is the centre of the circle. AB and CD are two chords of the circle. OM is perpendicular to AB and ON is perpendicular to CD. $AB = 24$ cm, $OM = 5$ cm, $ON = 12$ cm. Find the : [4]

(i) radius of the circle.

(ii) length of chord CD.



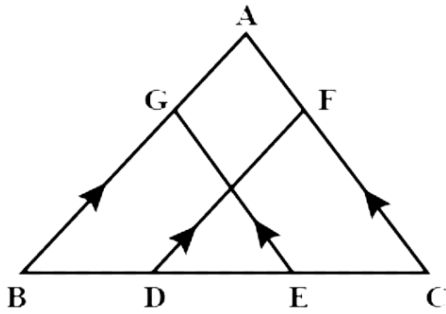
8A. The ratio between exterior and interior angle of a regular polygon is 2:3 find the number of side in a polygon. [3]

8B Give graphical solution of given a pair equation in two variables $y = 2x + 1$ and $x + 2y + 3 = 0$ [3]

8C A In a parallelogram ABCD, point p lies in DC such that $DP:PC = 3:2$ if area of triangle DPB is 30 sq cm, find the area of parallelogram ABCD [4]

9A. If $X = 5 - 2\sqrt{6}$ then find the value of $x^2 - 1/x^2$ [3]

9B In given figure : $AB \parallel FD$, $AC \parallel GF$ and $BD = CE$ prove that [3]



(I) $BG = DF$

(II) $CF = EG$

9C If 75 persons can sleep in a room 25 m by 9.6 m. If each person requires 16 m^3 of air; find the height of the room. [4]

10 A. Prove that the points $A(-5, 4)$ $B(-1, -2)$ and $C(5, 2)$ are the vertices of an isosceles right-angled triangle. [3]

10 B. The median of observations 10, 11, 13, 17, $x + 5$, 20, 22, 24 and 53-(arranged in ascending order) is 18; find the value of x . [3]

10 C Find the value of m and n : if: [4]

$$(i) \frac{3+\sqrt{2}}{3-\sqrt{2}} = m+n\sqrt{2}$$