

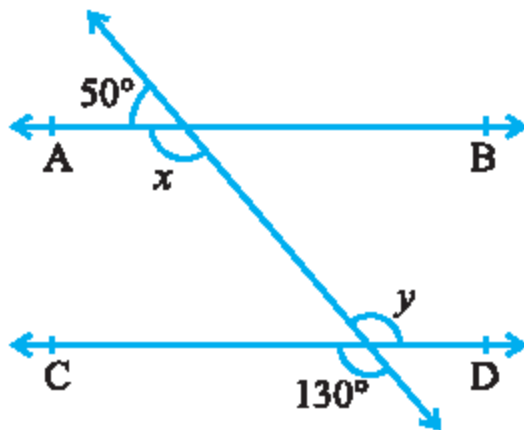
SAMPLE QUESTION PAPER SA-I(CBSC Board)
CLASS IX
(SECTION-A)

TIME 3 HRS.

M.M.:90

Question numbers 1 to 8 carry 1 mark each. For each question, four alternative choices have been provided of which only one is correct. You have to select the correct choice.

1. X- coordinate is called
(A) abscissa (B) Ordinate (C) Coordinate (D) None
2. Linear equation of the type $y = mx$, $m \neq 0$ is always pass through
(A) (0,0) (B) (1,1)
(C) (2,2) (D) (-1,-1)
3. The incentre of the triangle lies
(A) Always Inside of the triangle (B) Outside the triangle
(C) On the triangle (D) None
4. How many rational between two rational number are
(A) 1 (B) 2 (C) Infinite (D) Finite
5. Find the area of triangle whose sides are 3m, 4m and 5m.
(A) $6m^2$ (B) $10m^2$ (C) $7.5m^2$ (D) Can not be calculated
6. Find the value of x and y from the given figure below.



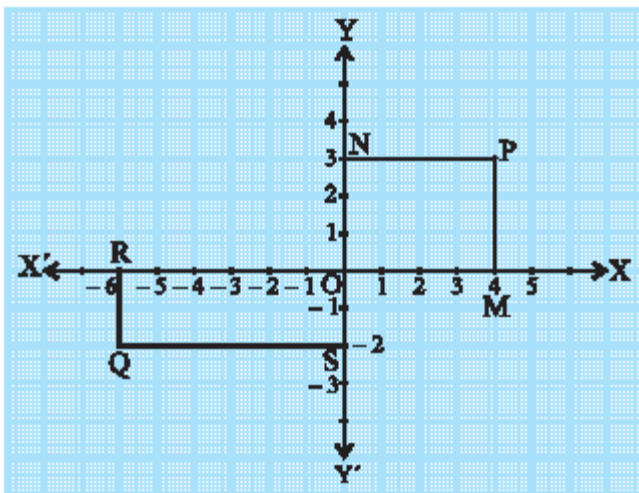
- (A) 130° and 130° (B) 50° and 80° (C) 80° and 130° (D) None

7. Given two points in a plane, the line joining to these two point will be
 (A) Unique (B) Many (C) 2 (D) None
8. solve: $(a - \sqrt{b})(a + \sqrt{b})$
 (A) $a^2 - b^2$ (B) $a - b^2$ (C) $a^2 - b$ (D) $a^2 + b^2$

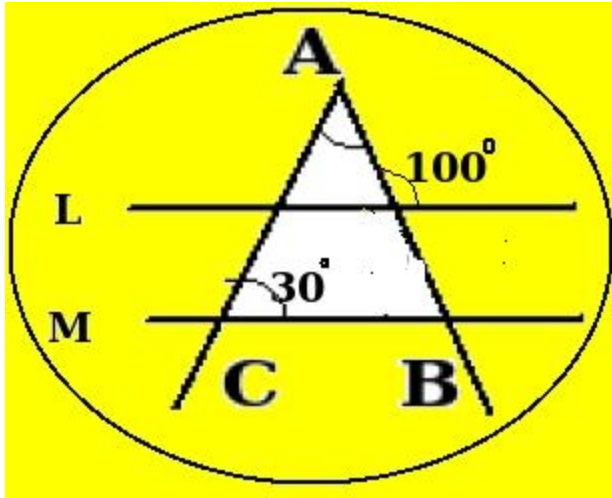
SECTION-B

Question numbers 9 to 14 carry 2 marks each.

9. Simplify: $(3)^{\frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6}} \times (\frac{1}{9})$
10. write Heron's formula, semi-perimeter of triangle of sides are a, b and c meters.
11. Draw the diagram and prove the SAS congruency between two triangle.
12. Find the degree and coefficient of t^2 in each of the following:
 (i) $t^9 + t^7 + t^5 + t^3 + t + 5$
 (ii) $t^3 + \sqrt{2}t^2 + t + 3$
13. write down the coordinate of the P, Q, M, N, R, O and S.



14. if line L and M are parallel then find the angle A. from given figure.



SECTION-C

Question numbers 15 to 24 carry 3 marks each.

15. The sides of a triangular plot are in the ratio of 3 : 5 : 7 and its perimeter is 300 m. Find its area.

16. Prove that a diagonal of a parallelogram divides it into two congruent triangles.

17. Find the remainder when $x^4 + x^3 + 2x^2 - 2x - 2$ is divided by $(x - 1)$.

18. AB is a line segment and line l is its perpendicular bisector. If a point P lies on l, show that P is equidistant from A and B.

19. Rationalise the denominator of the following:

(i) $\frac{2-\sqrt{3}}{4-\sqrt{12}}$

(ii) $\frac{1}{3-\sqrt{5}}$

20. If a point C lies between two points A and B such that $AC = BC$, then prove that

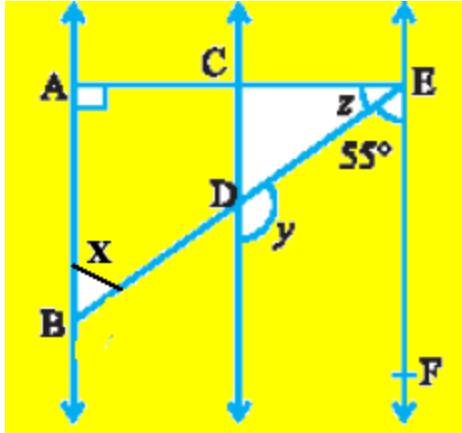
$AC = \frac{1}{2}AB$. Explain by drawing the figure.

OR

Solve the equation $2x - 9 = x - 1$ and represent the solution(s)

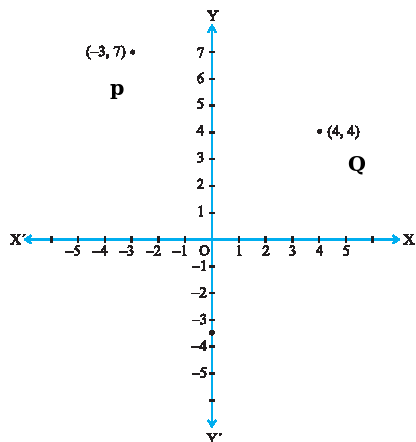
- (i) on the number line
- (ii) in the Cartesian plane.

21. Example 6 : In Fig. 6.27, $AB \parallel CD$ and $CD \parallel EF$. Also $EA \perp AB$. If $\angle BEF = 55^\circ$, find the value of x, y and z .



22. Sanya has a piece of land which is in the shape of a rhombus. She wants her one daughter and one son to work on the land and produce different crops. She divided the land in two equal parts. If the perimeter of the land is 400 m and one of the diagonals is 160 m, how much area each of them will get for their crops?

23. find the distance between P and Q.



24. Factorise $9x^2 + y^2 + 4z^2 - 6xy - 4yz + 12zx$

SECTION-D

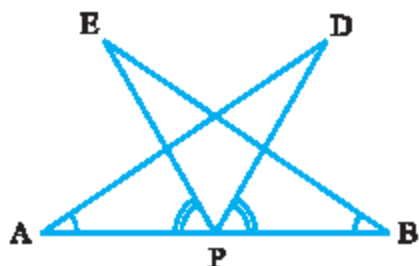
Question numbers 25 to 34 carry 4 marks each.

25. AB is a line segment and P is its mid-point. D and E are points on the same side of AB such that

$\angle BAD = \angle ABE$ and $\angle EPA = \angle DPB$ (see Figure). Show that

(i) $\triangle DAP \cong \triangle EBP$

(ii) $AD = BE$



26. Check whether $3\sqrt{5}$, $\sqrt{2} + 10$ and $\pi - 3$ are irrational number or not ?

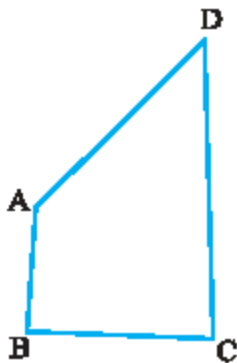
27. Draw the graph of linear equation $x + y = 8$. From the graph, check whether (2,5) is a solution of this equation also find the x- intercept and the y-intercept.

28. If a transversal intersects two lines such that the bisectors of a pair of corresponding angles are parallel, then prove that the two lines are parallel.

29. Find the area of a triangle, two sides of which are 8 cm and 11 cm and the perimeter is 32 cm.

30. Construct a triangle ABC in which $BC = 7\text{cm}$, $\angle B = 75^\circ$ and $AB + AC = 13\text{ cm}$.

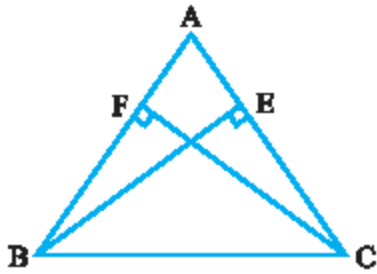
31. AB and CD are respectively the smallest and longest sides of a quadrilateral ABCD (see Figure). Show that $\angle A > \angle C$ and $\angle B > \angle D$.



32. ABC is a triangle in which altitudes BE and CF to sides AC and AB are equal (see Figure below). Show that

(i) $\triangle ABE \cong \triangle ACF$

(ii) $AB = AC$, i.e., ABC is an isosceles triangle.



33. In which quadrant or on which axis do each of the points $(-2, 4)$, $(3, -1)$, $(-1, 0)$, $(1, 2)$ and $(-3, -5)$ lie? Verify your answer by locating them on the Cartesian plane.

34. Find the value of k , if $x - 1$ is a factor of $4x^3 + 3x^2 - 4x + k$ and also find the remaining factor of polynomials.

Answers:

1. A

2. A

3. A

4. C

5. A

6. A

7. A

8. C

9. 1

10. $\Delta = \sqrt{s(s-a)(s-b)(s-c)}$ and $s = \frac{a+b+c}{2}$

12. (i) 9, 0 (ii) $3, \sqrt{2}$

13. $P(4, 3)$, $Q(-6, -2)$, $M(4, 0)$, $N(0, 3)$, $R(-6, 0)$, $O(0, 0)$, $S(0, -2)$

14. 70^0

15. $1500\sqrt{3} m^2$

17. 0

19. (i) 0.5 (ii) $\frac{1}{4}(3 + \sqrt{5})$

21. $55^0, 125^0, 35^0$

22. $4800 m^2$

23. $\sqrt{58}$

24. $(3x - y + 2z)(3x - y + 2z)$

26. All irrational

27. No, 8,8.

29. $8\sqrt{30} cm^2$

33. II, IV, x-axis, I, III

34. -3, $(x + 1)(x - 1)(4x + 3)$

For any query or detailed solution of any question:

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