



ANGEL'S PUBLIC SCHOOL

SAMPLE PAPER

HALF YEARLY EXAM SESSION 2025 – 26

CLASS – IX

TIME: 3 HRS

SUBJECT : MATHEMATICS

M.M:80

General Instructions:

- (a) Section A comprises 20 questions of 1 mark each.
- (b) Section B comprises 5 questions of 2 marks each.
- (c) Section C comprises 6 questions of 3 marks each.
- (d) Section D comprises 4 questions of 5 marks each.
- (e) Section E comprises 3 case based questions of 4 marks each.

SECTION – A

I. Choose the correct option:

1. The value of abscissa in (3,5) is ____.
(a) 5 (b) 3 (c) -3 (d) -5
2. Which of the following is an irrational number?
(a) $\sqrt{225}$ (b) 0.3796 (c) $\sqrt{23}$ (d) $\sqrt{4}$
3. The value of $32^{1/5}$ is ____.
(a) 3 (b) 2 (c) 5 (d) -2
4. Two complementary angles are such that two times the measure of one angle is equal to three times the measure of the other. The measure of the smaller angle is ____.
(a) 45° (b) 30° (c) 36° (d) 36°
5. The coordinates $(-3,-2)$ lies in ____ quadrant.
(a) IV quadrant (b) I quadrant (c) III quadrant (d) II quadrant
6. The complement of 50° is ____.
(a) 45° (b) 50° (c) 40° (d) 30°
7. Which of the following is a rational number?
(a) 0.101001000.... (b) 0.678 (c) $\sqrt{13}$ (d) $\sqrt{23}$
8. The ordinate of $(-5,7)$ is ____.
(a) 7 (b) -3 (c) -5 (d) -7
9. There are ____ rational numbers between any two rational numbers.
(a) zero (b) infinitely many (c) one (d) none of the above
10. If the bisectors of the acute angles of a right triangle meet at I, then the angle at O between the two bisectors is ____.
(a) 45° (b) 95° (c) 135° (d) 90°
11. A terminated line can be produced indefinitely on ____.
(a) one side (b) both the sides (c) perpendicular side (d) none of the above
12. If $\triangle PQR \cong \triangle EFD$, then angle ED is equal to ____.
(a) PQ. (b) PR. (c) QR. (d) None of the above
13. How many lines can pass through a given point?
(a) 2 (b) 0 (c) 1 (d) Infinite
14. Mode of the data 2,7,1,2,7,1,8,2 is ____
(a) 2 (b) 7 (c) 1 (d) 8
15. $x=2, y=-1$ is a solution of the linear equation ____.
(a) $x+2y=0$ (b) $x+2y=4$ (c) $2x+y=0$ (d) $2x+y=5$

16. The area of an equilateral triangle with side 3 cm is ____.
- (a) $9\sqrt{3}/4$ (b) $7\sqrt{2}/4$ (c) 17 (d) $9\sqrt{2}/4$
17. The distance between the graphs of the equations $x = -3$ and $x = 2$ is ____.
- (a) 2 (b) 4 (c) 3 (d) 5
18. If (a,4) lies on the graph of $3x + y = 10$, then the value of a is ____.
- (a) 3 (b) 1 (c) 2 (d) 4
19. The value of $64^{-3/4}$ is ____
- (a) $1/512$ (b) 512 (c) 8 (d) 16
20. The complement of 40° is ____
- (a) 40° (b) 50° (c) 10° (d) 100°

SECTION – B

21. Simplify:
- (a) $(3 + \sqrt{3})(2 + \sqrt{2})$ (b) $(\sqrt{7} - \sqrt{2})(\sqrt{7} + \sqrt{2})$
22. Find three rational numbers between $2/7$ and $3/5$.
23. Find three solutions of the equation $2x + y = 20$.
24. Write the abscissa and ordinate of (2, -5), (3, 0), (-2, -5) and (-5, 0).
25. Define the following terms:
- (a) Line segment (b) Square

OR

Write four axioms of Euclid.

SECTION – C

26. Check whether the following are the solutions of the equation $2x + 3y = 15$
- (a) (2,3) (b) (3,2). (c) (1,1)
27. In an isosceles triangle ABC, with $AB = AC$, the bisectors of $\angle B$ and $\angle C$ intersect each other at O. Join A to O. Show that : (a) $OB = OC$ (b) AO bisects $\angle A$
28. A survey conducted by an organisation for the cause of illness and death among the women between the ages 15–44 (in years) worldwide, found the following figures (in %)

S.NO	CASES	FEMALE FATALITY RATE (IN %)
1.	Reproductive health conditions	31.8
2.	Neuropsychiatric conditions	25.4
3.	Injuries	12.4
4.	Cardiovascular conditions	4.3
5.	Reparatory conditions	4.1

29. The length of 40 leaves of a plant measured correct to one millimetre and the obtained data is represented in the following table.

Draw a histogram to represent the above information.

Length (in mm)	Number of leaves
118-126	3
127-135	5
136-144	9
146-153	12
154-162	5
163-171	4
172-180	2

30. Find the mean of the first 8 composite numbers.

31. If the two parallel lines are intersected by a transversal, prove that the bisectors of the two pairs of interior angles enclose a rectangle.

OR

In triangle ABC, $AB = AC$, and the measure of angle ABC is 50° . Find the measure of angle BAC and angle ACB.

SECTION – D

32. Show that in an equilateral triangle, all angles are 60° .

33. Plot the following on a graph paper:

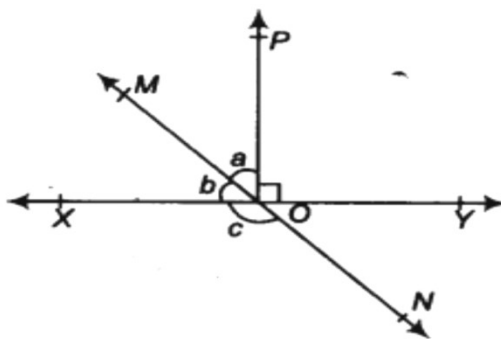
(i) $(2,3)$, $(-1,-2)$, $(0,3)$, $(-2,-1)$

OR

(ii) Plot the points $A(2, 3)$, $B(2, -1)$, $C(-3, -1)$, and $D(-3, 3)$ on a Cartesian plane. Name the figure formed by joining these points in order $A \rightarrow B \rightarrow C \rightarrow D \rightarrow A$, and find its area.

34. Prove that “Angles opposite to equal sides of an isosceles triangle are equal”.

35. In figure, lines XY and MN intersect at O. If $\angle POY = 90^\circ$, and $a : b = 2 : 3$. find c.



SECTION – E

36. In a school, 5 out of every 7 children participated in 'Save Wild Life' Campaign organized by the school.

(a) How many rational numbers are there between 5 and 7?

(i) 1

(ii) 2

(iii) Infinite

(b) What fraction of students participated in the campaign?

(i) $7/7$

(ii) $5/7$

(iii) $2/7$

(c) What kind of decimal expansion the number $5/7$ has?

(i) Terminating

(ii) Non terminating

(iii) Non terminating repeating

(iv) Non terminating non repeating

(d) Every rational number is a ____.

(i) Prime

(ii) Coprime

(iii) Real

(iv) Even

37. Four friends Ram, Raju, Ravi, Ritu are standing in reference to a well situated at the origin with the following respective coordinates $(2,4)$, $(-2,4)$, $(-2, -4)$ and $(2,-4)$

(a) By plotting these points on a single graph paper the figure obtained is a rectangle. Find the perimeter of the rectangle.

(b) Find the distance between Ram and Raju?

(i) 2 cm

(ii) 3 cm

(iii) 4 cm

(iv) 5 cm

(c) Raju stands on which quadrant.

(i) Quadrant I

(ii) Quadrant II

(iii) Quadrant III

(iv) Quadrant IV

(v) Ordinate of $(2, -4)$ is. ____

38. A city park has a newly built crossing where two straight walking paths intersect each other. The management has installed signboards along these paths. The paths cross each other forming an intersection like the letter **X**.

One signboard is fixed at one of the angles formed by these intersecting paths. The angle between the two paths at this point measures **65°** .

Nearby, a child notices the other angles formed at this crossing and wonders about their measures. The child tries to calculate these angles using knowledge of vertically opposite angles and linear pairs.

(a) What is the measure of the vertically opposite angle to the 65° angle?

(b) What are the measures of the other two angles formed at the intersection?

(c) Which property of angles will you apply to justify your answers?