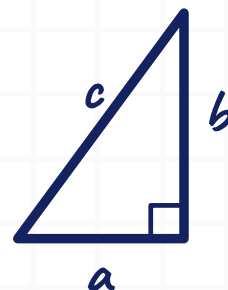
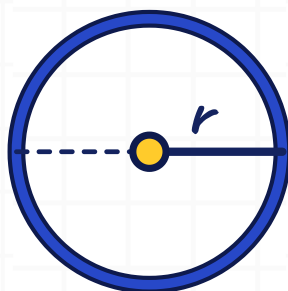


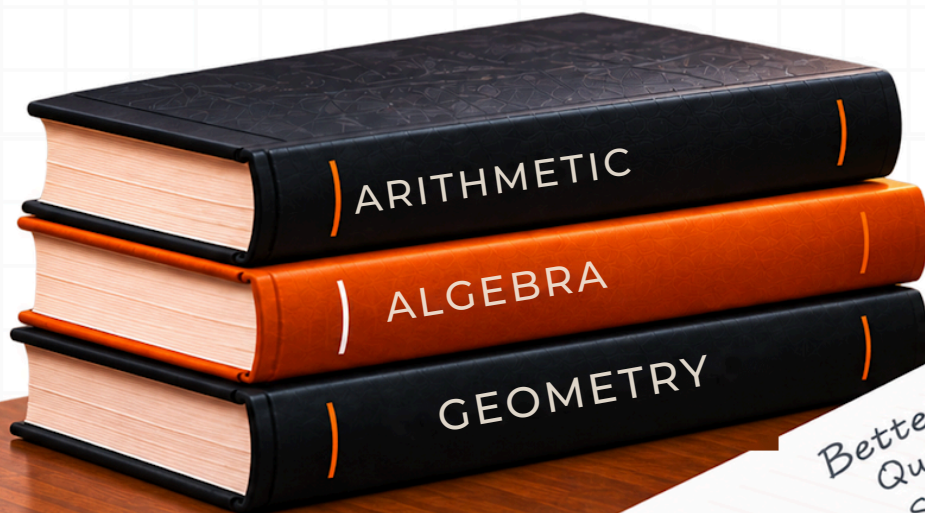
CAT PYQ

Coordinate Geometry

$$a^2 + b^2 = c^2$$



$$D = S \times T$$



Better
Questions
Stronger
Concepts
Brighter Future

Coordinate Geometry CAT PYQ



Common Admission Test - Indian Institutes of Management

18 Questions

Quantitative Aptitude

Years: 1991-2025

General Instructions

- (i) This collection contains **18 Quantitative Aptitude questions** classified under **Coordinate Geometry**, following the supplied CD PYQ sheet.
- (ii) **Coverage:** CAT 1991-2025. Questions are grouped by their source year and sitting, with continuous numbering from **1 to 18**.
- (iii) This collection has **17 multiple choice questions (MCQs)** and **1 Type In The Answer (TITA) questions**. Read every option before choosing the answer. Enter a response for questions marked "Type in the answer."
- (iv) Original mathematical expressions, question wording and option order are retained. Use the diagrams and data provided with each question.
- (v) Each question carries its original year or exam date, sitting where available, and source question number.
- (vi) Use this collection for practice. Follow the timing and marking scheme of the original sitting when attempting a timed exercise.
- (vii) Answer keys and solutions are not included. Passages and questions may continue onto the following page.

CAT 2025 Slot 1 - Questions 1-1

1. The (x, y) coordinates of vertices P, Q and R of a parallelogram PQRS are (-3, -2), (1, -5) and (9, 1), respectively. If the diagonal SQ intersects the x-axis at (a, 0), then the value of a is

30 Nov 2025, Slot 1, Q63

(A) $\frac{27}{7}$
(C) $\frac{13}{4}$

(B) $\frac{10}{3}$
(D) $\frac{29}{9}$

2. In the XY-plane, the area, in sq. units, of the region defined by the inequalities $y \geq x + 4$ and $-4 \leq x^2 + y^2 + 4(x - y) \leq 0$ is

24 Nov 2024, Slot 1, Q58

(A) 2π

(B) 4π

(C) π

(D) 3π

CAT 2024 Slot 2 - Questions 3-3

3. The coordinates of the three vertices of a triangle are: $(1, 2)$, $(7, 2)$, and $(1, 10)$. Then the radius of the incircle of the triangle is

24 Nov 2024, Slot 2, Q48

Type in the answer.

4. Let ABCD be a parallelogram such that the coordinates of its three vertices A, B, C are (1, 1), (3, 4) and (−2, 8), respectively. Then, the coordinates of the vertex D are

27 Nov 2022, Slot 1, Q62

(A) (0, 11)

(B) (4, 5)

(C) (−3, 4)

(D) (−4, 5)

CAT 2020 Slot 3 - Questions 5-5

5. The points (2,1) and (-3,-4) are opposite vertices of a parallelogram. If the other two vertices lie on the line $x + 9y + c = 0$, then c is

29 Nov 2020, Slot 3, Q65

(A) 12

(B) 13

(C) 15

(D) 14

CAT 2018 Slot 2 - Questions 6-6

6. A triangle ABC has area 32 sq units and its side BC, of length 8 units, lies on the line $x = 4$. Then the shortest possible distance between A and the point (0,0) is

25 Nov 2018, Slot 2, Q87

- (A) 8 units
(B) 4 units
(C) $2\sqrt{2}$ units
(D) $4\sqrt{2}$ units
-

CAT 2017 Slot 1 - Questions 7-8

7. The area of the closed region bounded by the equation $|x| + |y| = 2$ in the two-dimensional plane is

26 Nov 2017, Slot 1, Q81

- (A) 4π sq. units
(B) 4 sq. units
(C) 8 sq. units
(D) 2π sq. units
-

8. The shortest distance of the point $(\frac{1}{2}, 1)$ from the curve $y = |x - 1| + |x + 1|$ is

26 Nov 2017, Slot 1, Q96

- (A) 1
(B) 0
(C) $\sqrt{2}$
(D) $\sqrt{\frac{3}{2}}$
-

CAT 2017 Slot 2 - Questions 9-9

9. The points (2, 5) and (6, 3) are two end points of a diagonal of a rectangle. If the other diagonal has the equation $y = 3x + c$, then c is

26 Nov 2017, Slot 2, Q83

- | | |
|--------|--------|
| (A) -5 | (B) -6 |
| (C) -7 | (D) -8 |
-

CAT 2005 - Questions 10-12

10. For which value of k does the following pair of equations yield a unique solution for x such that the solution is positive? $x^2 - y^2 = 0$ $(x - k)^2 + y^2 = 1$

20 Nov 2005, Q10

- | | |
|----------------|------------------|
| (A) 2 | (B) 0 |
| (C) $\sqrt{2}$ | (D) $-2\sqrt{2}$ |

11. Consider a triangle drawn on the X-Y plane with its three vertices at $(41, 0)$, $(0, 41)$ and $(0, 0)$, each vertex being represented by its (X, Y) coordinates. The number of points with integer coordinates inside the triangle (excluding all the points on the boundary) is

20 Nov 2005, Q12

- | | |
|---------|---------|
| (A) 780 | (B) 800 |
| (C) 820 | (D) 741 |

12. In the X-Y plane, the area of the region bounded by the graph of $|x+y| + |x-y| = 4$ is

20 Nov 2005, Q21

- | | |
|--------|--------|
| (A) 8 | (B) 12 |
| (C) 16 | (D) 20 |

13. The area of the triangle whose vertices are (a, a) , $(a + 1, a + 1)$ and $(a + 2, a)$ is

CAT 2002, Q58

(A) a^3

(B) 1

(C) $2a$

(D) $2^{1/2}$

CAT 2000 - Questions 14-15

14. ABCD is a rhombus with the diagonals AC and BD intersection at the origin on the x-y plane. The equation of the straight line AD is $x + y = 1$. What is the equation of BC?

CAT 2000, Q96

- (A) $x+y=-1$ (B) $x-y=-1$
(C) $x+y=1$ (D) None of the above
-

15. The area bounded by the three curves $|x+y| = 1$, $|x| = 1$, and $|y| = 1$, is equal to:

CAT 2000, Q99

- (A) 4 (B) 3
(C) 2 (D) 1
-

CAT 1996 - Questions 16-16

16. The points of intersection of three lines $2x + 3y - 5 = 0$, $5x - 7y + 2 = 0$ and $9x - 5y - 4 = 0$

CAT 1996, Q137

- (A) form a triangle
(B) are on lines perpendicular to each other
(C) are on lines parallel to each other
(D) are coincident
-

CAT 1991 - Questions 17-18

17. A man starting at a point walks one km east, then two km north, then one km east, then one km north, then one km east and then one km north to arrive at the destination. What is the shortest distance from the starting point to the destination?

CAT 1991, Q95

- (A) $2\sqrt{2}$ km (B) 7 km
(C) $3\sqrt{2}$ km (D) 5 km
-

18. What is the distance between the points A(3, 8) and B(-2,-7)?

CAT 1991, Q100

- (A) $5\sqrt{2}$ (B) 5
(C) $5\sqrt{10}$ (D) $10\sqrt{2}$

- End of PYQ Collection -
