

PYQSide

JEE MAIN CONIC SECTIONS — CIRCLE: STANDARD AND GENERAL EQUATION — PYQS

Max. Marks: 32

Questions: 8

Section A (MCQ)

- Q.1** Let P be a moving point on the circle $x^2 + y^2 - 6x - 8y + 21 = 0$. Then, the maximum distance of P from the vertex of the parabola $x^2 + 6x + y + 13 = 0$ is equal to:

[JEE Main 2026 (Online) 5th April Morning Shift]

- (1) 8 (2) 10 (3) 12 (4) 9

Scan or tap for the full solution



- Q.2** Let the set of all values of r, for which the circles $(x + 1)^2 + (y + 4)^2 = r^2$ and $x^2 + y^2 - 4x - 2y - 4 = 0$ intersect at two distinct points be the interval (α, β) . Then $\alpha\beta$ is equal to

[JEE Main 2026 (Online) 22nd January Morning Shift]

- (1) 21 (2) 24 (3) 20 (4) 25

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- Q.3** Let C_1 be the circle in the third quadrant of radius 3, that touches both coordinate axes. Let C_2 be the circle with centre (1, 3) that touches C_1 externally at the point (α, β) . If $(\beta - \alpha)^2 = \frac{m}{n}$, $\gcd(m, n) = 1$, then $m + n$ is equal to

[JEE Main 2025 (Online) 7th April Morning Shift]

- (1) 22 (2) 13 (3) 9 (4) 31

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- Q.4** If the four distinct points (4, 6), (-1, 5), (0, 0) and (k, 3k) lie on a circle of radius r, then $10k + r^2$ is equal to

[JEE Main 2025 (Online) 3rd April Evening Shift]

- (1) 34 (2) 32 (3) 35 (4) 33

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- Q.5** Let the line $x + y = 1$ meet the circle $x^2 + y^2 = 4$ at the points A and B. If the line perpendicular to AB and passing through the mid-point of the chord AB intersects the circle at C and D, then the area of the quadrilateral ABCD is equal to :

[JEE Main 2025 (Online) 29th January Morning Shift]

- (1) $\sqrt{14}$ (2) $3\sqrt{7}$ (3) $2\sqrt{14}$ (4) $5\sqrt{7}$

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- Q.6** Let the equation of the circle, which touches x-axis at the point (a, 0), $a > 0$ and cuts off an intercept of length b on y-axis be $x^2 + y^2 - \alpha x + \beta y + \gamma = 0$. If the circle lies below x-axis, then the ordered pair $(2a, b^2)$ is equal to

[JEE Main 2025 (Online) 28th January Morning Shift]

- (1) $(\alpha, \beta^2 + 4\gamma)$ (2) $(\alpha, \beta^2 - 4\gamma)$
(3) $(\gamma, \beta^2 - 4\alpha)$ (4) $(\gamma, \beta^2 + 4\alpha)$

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Section B (Numerical)

- Q.7** Let a circle C have its centre in the first quadrant, intersect the coordinate axes at exactly three points and cut off equal intercepts from the coordinate axes. If the length of the chord of C on the line $x + y = 1$ is $\sqrt{14}$, then the square of the radius of C is _____.

[JEE Main 2026 (Online) 2nd April Morning Shift]

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- Q.8** The absolute difference between the squares of the radii of the two circles passing through the point (-9, 4) and touching the lines $x + y = 3$ and $x - y = 3$, is equal to _____.

[JEE Main 2025 (Online) 2nd April Morning Shift]

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ANSWER KEY

Section A (MCQ)

Ques.	1	2	3	4	5	6					
Ans.	3	4	1	3	3	2					

Section B (Numerical)

Ques.	7	8					
Ans.	8	768					