

Tarun Classes of Mathematics

IIT-JEE Mains | CBSE | PU-CET | NDA

Talwara Township, Hoshiarpur | +91 9463672753 | tarunclasses.in

Conic Sections

Subjects : Maths

PUCET Practice Questions

Maths - Section A (MCQ.)

- Equation of a circle whose area is 154 sq units and having $2x - 3y + 12 = 0$ and $x + 4y - 5 = 0$ as diameters is
A) $x^2 + y^2 + 6x - 4y - 36 = 0$ B) $x^2 - y^2 + 6x - 4y - 36 = 0$
C) $x^2 + y^2 - 6x + 4y - 36 = 0$ D) $x^2 + y^2 + 6x - 4y + 36 = 0$
- The radius and centre of circle which equation is $3x^2 + 3y^2 + 6x + 12y + 5 = 0$ is
A) $(-3, -4), \sqrt{20}$ B) $(3, 4), \sqrt{20}$ C) $(-1, -2), 5\sqrt{\frac{2}{3}}$ D) $(1, 2), 5\sqrt{\frac{2}{3}}$
- The length of y -intercept of the circle $x^2 + y^2 - 6x + 4y + 3 = 0$ is
A) 2 B) $2\sqrt{2}$ C) $2\sqrt{7}$ D) $2\sqrt{6}$
- The equation of a circle passing through the origin is $x^2 + y^2 - 6x + 2y = 0$. The equation of one of its diameter is
A) $x - 3y = 0$ B) $x + 3y = 0$ C) $x + y = 0$ D) $3x - y = 0$
- The number of common tangent to the circle $x^2 + y^2 = 9$ and $x^2 + y^2 - 6x - 8y + 21 = 0$
A) 0 B) 1 C) 3 D) 4
- The circle $x^2 + y^2 + 3x - y + 2 = 0$ cuts an intercept on X -axis of length
A) 3 B) 4 C) 2 D) 1
- The centre of the circle passing through $(0, 0)$ and $(1, 0)$ and touching the circle $x^2 + y^2 = 9$ is
A) $\left(\frac{1}{2}, \frac{3}{2}\right)$ B) $\left(\frac{3}{2}, \frac{1}{2}\right)$
C) $\left(\frac{1}{2}, -\sqrt{2}\right)$ D) $\left(\frac{1}{2}, \frac{1}{2}\right)$
- If two circles $(x - 1)^2 + (y - 3)^2 = r^2$ and $x^2 + y^2 - 8x + 2y + 8 = 0$ intersect in two distinct points, then
A) $2 < r < 8$ B) $r < 2$ C) $r = 2$ D) $r > 2$
- What will be the equation of circle whose centre is $(1, 2)$ and touches X -axis?
A) $x^2 + y^2 - 2x - 4y + 1 = 0$ B) $x^2 - y^2 + 2x + 4y + 1 = 0$
C) $x^2 + y^2 + 2x - 4y - 1 = 0$ D) $x^2 + y^2 + 2x + 4y - 1 = 0$
- If $3x + y + k = 0$ is a tangent to the circle $x^2 + y^2 = 10$, the values of k are
A) ± 5 B) ± 7 C) ± 9 D) ± 10

11. If the circles $x^2 + y^2 - 2x - 2y - 7 = 0$ and $x^2 + y^2 + 4x + 2y + k = 0$ cut orthogonally, then the length of the common chord of the circles is
 A) 2 B) $12/\sqrt{13}$ C) 8 D) 5
12. The point $(5, -7)$ lies outside the circle
 A) $x^2 + y^2 - 8x = 0$ B) $x^2 + y^2 - 5x + 7y = 0$
 C) $x^2 + y^2 - 5x + 7y - 1 = 0$ D) $x^2 + y^2 - 8x + 7y - 2 = 0$
13. If the circle $x^2 + y^2 = 9$ and $x^2 + y^2 + 20x + 2y + 1 = 0$ touch each other internally, then $\alpha =$
 A) $\pm \frac{4}{3}$ B) 1 C) $\frac{4}{3}$ D) $-\frac{4}{3}$
14. The point $(5, -7)$ lies outside the circle
 A) $x^2 + y^2 - 8x = 0$ B) $x^2 + y^2 - 5x + 7y = 0$
 C) $x^2 + y^2 - 5x + 7y - 1 = 0$ D) $x^2 + y^2 - 8x + 7y - 2 = 0$
15. The circle $x^2 + y^2 - 8x + 4y + 4 = 0$ touches
 A) X-axis B) Y-axis C) both axes D) neither X-axis nor Y-axis.
16. Equation of the chord of the circle $x^2 + y^2 + 4x - 6y - 9 = 0$ bisected at $(0, 1)$ is
 A) $y - 1 = x$ B) $y + 1 = x$ C) $y + 1 = 2x$ D) $y - 1 = 3x$
17. The number of common tangents to the circles $x^2 + y^2 - 2x - 4y + 1 = 0$ and $x^2 + y^2 - 12x - 16y + 91 = 0$ is
 A) 1 B) 2 C) 3 D) 4
18. If the area of the circle $7x^2 + 7y^2 - 7x + 14y + k - 0$ is 12π sq units, then the value of k is
 A) $-\frac{43}{4}$ B) $-\frac{301}{4}$ C) -16 D) ± 4
19. The ends of the latusrectum of the parabola $x^2 + 10x - 16y + 25 = 0$ are
 A) $(3, 4), (-13, 4)$ B) $(5, -8), (-5, 8)$ C) $(3, -4), (13, 4)$ D) $(-3, 4), (13, -4)$
20. The equation of the parabola with vertex at $(-1, 1)$ and focus $(2, 1)$ is
 A) $y^2 - 2y - 12x + 13 = 0$ B) $y^2 - 2y - 12x + 11 = 0$
 C) $x^2 + 2x - 12y + 13 = 0$ D) $y^2 - 2y - 12x - 11 = 0$
21. If $(0, 6)$ and $(0, 3)$ are respectively the vertex and focus of a parabola, then its equation is
 A) $x^2 + 12y = 72$ B) $x^2 - 12y = 72$ C) $y^2 - 12x = 72$ D) $y^2 + 12x = 72$
22. The latusrectum of the ellipse is half the minor axis. Then, its eccentricity is
 A) $\frac{1}{\sqrt{2}}$ B) $\frac{1}{\sqrt{3}}$ C) $\frac{\sqrt{3}}{2}$ D) None of these
23. $x = 4(1 + \cos \theta)$ and $y = 3(1 + \sin \theta)$ are the parametric equations of
 A) $\frac{(x-4)^2}{16} + \frac{(y-3)^2}{9} = 1$ B) $\frac{(x-4)^2}{16} - \frac{(y-3)^2}{9} = 1$
 C) $\frac{(x+4)^2}{16} + \frac{(y+3)^2}{9} = 1$ D) $\frac{(x-3)^2}{9} + \frac{(y-4)^2}{16} = 1$
24. For the ellipse $25x^2 + 9y^2 - 150x - 90y + 225 = 0$ the eccentricity e is equal to
 A) $\frac{2}{5}$ B) $\frac{3}{5}$ C) $\frac{4}{5}$ D) $\frac{1}{5}$
25. If the foci of the ellipse $\frac{x^2}{16} + \frac{y^2}{b^2} = 1$ and the hyperbola $\frac{x^2}{144} - \frac{y^2}{81} = \frac{1}{25}$ coincide then the value of b^2 is

A) 1

B) 7

C) 5

D) 9

26. A man running a race-course notes that the sum of the distances from the two flag posts from him is always 10 m and the distance between the flag posts is 8 m. The equations of the path traced by the man is given by
- A) $\frac{x^2}{9} + \frac{y^2}{25} = 1$ B) $\frac{x^2}{9} + \frac{y^2}{16} = 1$
- C) $\frac{x^2}{25} + \frac{y^2}{9} = 1$ D) $\frac{x^2}{16} + \frac{y^2}{25} = 1$
27. Area of the ellipse $\frac{x^2}{25} + \frac{y^2}{16} = 1$ is given by
- A) 25π sq units B) 20π sq units C) 4π sq units D) 5π units
28. The equation $\frac{x^2}{2-\lambda} - \frac{y^2}{\lambda-5} - 1 = 0$ represents an ellipse if
- A) $\lambda > 5$ B) $\lambda < 2$ C) $2 < \lambda < 5$ D) $2 > \lambda > 5$
29. If the length of the major axis of an ellipse is 3 times the length of the minor axis, then its eccentricity is
- A) $\frac{1}{\sqrt{2}}$ B) $\frac{2\sqrt{2}}{3}$ C) $\frac{1}{\sqrt{3}}$ D) $\frac{2}{\sqrt{3}}$
30. If the distance between the foci is equal to the length of the latus rectum, then the eccentricity of the ellipse is
- A) $\frac{1 \pm \sqrt{5}}{2}$ B) $\frac{1 - \sqrt{5}}{2}$ C) $\frac{\sqrt{5} + 1}{2}$ D) $\frac{\sqrt{5} - 1}{2}$
31. Equation of a hyperbola having foci at $(0, \pm\sqrt{10})$ and passing through the point $(2, 3)$ is
- A) $\frac{x^2}{5} + \frac{y^2}{5} = 1$ B) $y^2 - x^2 = 5$
- C) $\frac{x^2}{5} - \frac{y^2}{5} = 1$ D) $\frac{x^2}{\sqrt{5}} - \frac{y^2}{\sqrt{5}} = 1$
32. The distance between the foci of a hyperbola is 16 and its eccentricity is $\sqrt{2}$. Then its equation is
- A) $x^2 - y^2 = 32$ B) $\frac{x^2}{4} - \frac{y^2}{9} = 1$
- C) $3x^2 - 2y^2 = 7$ D) $2x^2 - 3y^2 = 7$
33. The ellipse $\frac{x^2}{25} + \frac{y^2}{16} = 1$ and the hyperbola $\frac{x^2}{25} - \frac{y^2}{16} = 1$ have in common
- A) centre and vertices only B) centre, foci and vertices
- C) centre, foci and directrices D) centre only
34. The length of the latus rectum of a conic $49y^2 - 16x^2 = 784$ is
- A) $\frac{7}{2}$ B) $\frac{49}{2}$ C) $\frac{49}{\sqrt{2}}$ D) $\frac{7}{\sqrt{2}}$
35. If the distance between the foci and the distance between the two directrices are in the ratio 3 : 2 for a hyperbola $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$, then a : b is
- A) $\sqrt{3} : \sqrt{2}$ B) 2 : 1 C) 1 : 2 D) $\sqrt{2} : 1$
36. Find the coordinates of the foci and the length of the latusrectum of the hyperbol(a)
- $\frac{x^2}{9} - \frac{y^2}{16} = 1$
- A) $(0, \pm 2), \frac{32}{3}$ B) $(0, \pm 5), \frac{32}{3}$ C) $(\pm 5, 0), \frac{32}{3}$ D) $(0, \pm 5), \frac{3}{32}$

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Maths - Section A (MCQ.)

1 - A	2 - C	3 - A	4 - B	5 - C	6 - D	7 - C	8 - A	9 - A	10 - D
11 - B	12 - A	13 - C	14 - A	15 - B	16 - A	17 - D	18 - B	19 - A	20 - D
21 - A	22 - C	23 - A	24 - C	25 - B	26 - C	27 - B	28 - B	29 - B	30 - D
31 - B	32 - A	33 - A	34 - B	35 - D	36 - C				

