JEE Advanced Questions Based on Most Repeated Concepts of Coordinate Geometry

Q: : If $\lambda x^2 - 5xy + 6y^2 + x - 3y = 0$ represents a pair of straight lines, then their point of intersection is

Q: If the perpendicular bisector of the line segment joining the points P(1, 4) and Q(k, 3) has y-intercept equal to -4, then a value of k is

Q: A straight line L through the point (3, -2) is inclined at an angle 60 0 to the line $\sqrt{3}x + y = 1$. If L also intersects the x-axis, then the equation of L is

Q: Let the curve C be the mirror image of the parabola y 2 = 4x with respect to the line x + y + 4 = 0. If A and B are the points of intersection of C with the line y = -5, then the distance between A and B is

Q: A circle S passes through the point (0, 1) and is orthogonal to the circles $(x-1)^2 + y^2 = 16$ and $x^2 + y^2 = 1$. Then

Q: If 2x - y + 1 = 0 is a tangent to the hyperbola $x^2/a^2 - y^2/16 = 1$, then which of the following cannot be sides of a right angles triangle?

Q: The point of intersection of the tangents at the ends of the latus rectum of the parabola $y^2 = 4x$ is

Q: If a triangle ABC has vertices A(-1, 7), B(-7, 1), and C(5, -5), then its orthocentre has coordinates

Q: For a > b> c> 0, the distance between (1, 1) and the point of intersection of the lines ax + by + c = 0 and bx + ay + c = 0 is less than $2\sqrt{2}$. Then

Q: Let O be the centre of the circle $x^2 + y^2 = r^2$, where $r > \sqrt{5}/2$. Suppose PQ is a chord of this circle and the equation of the line passing through P and Q is 2x + 4y = 5. If the centre of the circumcircle of the triangle OPQ lies on the line x + 2y = 4, then the value of r is

Q: The circle passing through the point (-1, 0) and touching the y-axis at (0, 2) also passes through the point

Q: If a chord, which is not a tangent, of the parabola y 2 = 16x has the equation 2x + y = p, and midpoint (h, k), then which of the following is(are) possible value(s) of p, h, and k?

Q: Let L be a normal to the parabola $y^2 = 4x$. If L passes through the point (9, 6) then L is given by

Q: The locus of the point of intersection of the lines $(\sqrt{3})kx + ky - 4\sqrt{3} = 0$ and $\sqrt{3}x - y - 4\sqrt{3}k = 0$ is a conic, whose eccentricity is

Q: If the line $y = mx + 7\sqrt{3}$ is normal to the hyperbola $x^2/24 - y^2/18 = 1$, then a value of m is

Q: Tangents are drawn to the hyperbola $x^2/9 - y^2/4 = 1$, parallel to the straight line $2x - y = 1$. The points of contact of the tangents on the hyperbola are

Q: Let a hyperbola passes through the focus of the ellipse $x^2/25 + y^2/16 = 1$. The transverse and conjugate axes of this hyperbola coincide with the major and minor axes of the given ellipse, also the product of eccentricities of given ellipse and hyperbola is 1, then