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\*Section-A JEE ADVANCED/IIT-JEE \*A:FILL IN THE BLANKS

If A and B are points in the plane such that  $\frac{PA}{PB} = K$  constant for all P on a given circle, then the value of K cannot be

The points of intersection of the line  $4x - 3y - 10 = 0$  and the circle  $x^2 + y^2 - 2x + 4y - 20 = 0$  are

The lines  $3x - 4y + 4 = 0$  and  $6x - 8y - 7 = 0$  are tangents to the same circle. The radius of the circle is

Let  $x^2 + y^2 - 4x - 2y - 11 = 0$  be a circle. A pair of tangents from the point 4, 5 with a pair of radii form a quadrilateral

From the origin chords are drawn to the circle  $x^2 + y^2 = 1$ . The equation of the locus of the mid-points of these chords is

The equation of the line passing through the points of intersection of the circles  $3x^2 + 3y^2 - 2x + 12y - 9 = 0$  and  $x^2 + y^2 + 6x + 2y - 15 = 0$  is

From the point A(0, 3) on the circle  $x^2 + 4x + y - 3^2 = 0$ , a chord AB is drawn and extended to a point M such that  $AM = 2AB$ . The equation of the locus of M is

The area of the triangle formed by the tangents from the point 4, 3 to the circle  $x^2 + y^2 = 9$  and the line joining their points of contact is

If the circle  $C_1 : x^2 + y^2 = 16$  intersects another circle  $C_2$  of radius 5 in such a manner that common chord is of maximum length, then the radius of  $C_2$  is

The area formed by the positive x-axis and the normal and the tangent to the circle  $x^2 + y^2 = 4$  at  $1, \sqrt{3}$  is

If a circle passes through the points of intersection of the coordinate axes with the lines  $\lambda x - y + 1 = 0$  and  $x - 2y + 3 = 0$ , then the value of  $\lambda$  is

The equation of the locus of the mid-points of the circle  $4x^2 + 4y^2 - 12x + 4y + 1 = 0$  that subtend an angle of  $\frac{2\pi}{3}$  at its centre is

The intercept of the line  $y = x$  by the circle  $x^2 + y^2 - 2x = 0$  is AB. Equation of the circle with AB as a diameter is

For each natural number k, let  $C_k$  denote the circle with radius k centimetres and centre at the origin. On the circle  $C_k$ , a point P is chosen such that the distance from P to the x-axis is k, then the value of k is

The chords of contact of the pair of tangents drawn from each point on the line  $2x + y = 4$  to  $x^2 + y^2 = 1$  pass through a fixed point, which is