

SUCCESS KEY TEST SERIES

Work Sheet

Std: 11th Science

Subject: Mathematics & Statistics

Time: 1Hrs

Date :

6. Circle

Max Marks: 40

Q.1 Select and write the most appropriate answers from given alternatives:

10

- 1) Find the equation of a circle with centre at origin and radius 4.
(a) $x^2 + y^2 = 4$ (b) $x^2 + y^2 = 16$ (c) $x^2 - y^2 = 16$ (d) None of these
- 2) The locus of the point of intersection of perpendicular tangents to a circle is called
(a) an auxiliary circle (b) a giant circle
(c) orbit (d) a director circle
- 3) The equation of the tangent to the circle $x^2 + y^2 + 5x - 7y + 4 = 0$ at (1,2) is
(a) $7x - 3y = 1$ (b) $6x + 5y = 1$ (c) $7x + 3y = 1$ (d) None of these
- 4) The equation of the tangent to the circle $\begin{matrix} x = 4\cos\theta \\ y = 4\sin\theta \end{matrix}$ at $\theta = \frac{\pi}{2}$ is
(a) $y = -2$ (b) $y = 2$ (c) $x = 2$ (d) None of these
- 5) Find the parametric equation of the circle $(x+1)^2 + (y+2)^2 = 36$.
(a) $\begin{matrix} x = -1 + 6\cos\theta \\ y = -2 + 6\sin\theta \end{matrix}$ (b) $\begin{matrix} x = 1 + 6\cos\theta \\ y = 2 + 6\sin\theta \end{matrix}$
(c) $\begin{matrix} x = 1 - 4\cos\theta \\ y = 1 - 4\sin\theta \end{matrix}$ (d) None of these

Q.2 Solve the following:

5

- 1) Find the centre and radius of the circle : $x^2 + y^2 = 25$
- 2) Find the equation of a circle with centre at origin and radius 3.
- 3) Find the centre and radius of the circle : $(x - 5)^2 + (y - 3)^2 = 20$
- 4) Find the equation of the circle with centre at origin and radius 4.
- 5) Write the parametric equation of the circle : $x^2 + y^2 = 9$

Q.3 Answer the following:

10

- 1) Find the parametric equation of the circle $x^2 + y^2 - 6x + 4y - 3 = 0$
- 2) Write the parametric equation of the circle.
 $(x - 3)^2 + (y + 4)^2 = 25$
- 3) Find the centre and radius of $x^2 + y^2 - 6x - 8y - 24 = 0$
- 4) Find the centre and radius of $x^2 + y^2 - 2x + 4y - 4 = 0$
- 5) Show that the equation $3x^2 + 3y^2 + 12x + 18y - 11 = 0$ represents a circle.

Q.4 Solve the following:

15

- 1) Find the equation of the circle concentric with $x^2 + y^2 - 4x + 6y = 1$ and having radius 4 units
- 2) Find the equation of tangent to the circle $x^2 + y^2 = 64$ at the point P

$$\left(\frac{2\pi}{3}\right)$$

- 3) Find the equation of the circle with centre
At $(-2, 3)$ touching the X- axis
- 4) Find the equation of the circle with centre at $(-3, -3)$ passing through point $(-3, -6)$
- 5) Tangents to the circle $x^2 + y^2 = a^2$ with inclinations, θ_1 , and θ_2 intersect in P. Find the locus of such
that
 $\tan\theta_1 + \tan\theta_2 = 0$

----- All the Best -----