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National Institute of Open Schooling (NIOS)
Senior Secondary Course
Lesson – 15: Circles
Worksheet -15

1. List out the special features of the general equation of circle $x^2 + y^2 + 2gx + 2fy + c = 0$

2. Find the equation of the circle that passing through the points (1, 0), (0, 1) and (–1. 0).

3. If the circle passing through the points (2, 3), (4, 1) and (3, 5) and whose centre is on the line $4x + y = 6,$ then find equation of the circle.

4. Show that the points (9, 1), (7, 9), (–2. 12) and (6, 10) are Concylic.

5. Find that the equation of the circle circumscribing the triangle formed by the lines as:

$x + y - 6 = 0$

$2x + y - 4 = 0$

$x + 2y - 5 = 0$

6. Determine the point (–2.5, 3.5) lie inside, outside or on the circle $x^2 + y^2 = 25$

7. Find the equation of the circle which has the portion of the line $3x + 4y = 14$ intercepted by the lines $x - y = 0$ and $11x - 4y = 0$ as a diameter.

8. An equilateral triangle ABC inscribed in the circle $x^2 + y^2 - 6x + 2y - 28 = 0.$ Find the area of the triangle ABC.

9. Find the equation of the circle concentric with $x^2 + y^2 - 4x - 6y - 3 = 0$ and which touches the y-axis.

10. If $y = 2x$ is a chord of the circle $x^2 + y^2 - 10x = 0,$ then find the equation of the circle with this chord as diameter.