

Equation of a Circle Worksheet 1

Name: _____ Date: _____

1. Find the points of intersection of the line $y = x + 4$ and the circle.

$$(x + 1)^2 + (y - 4)^2 = 25$$

2. Find the length of the chord $x - y + 3 = 0$ of the circle $x^2 + y^2 - 2x - 2y - 7 = 0$

3. Given that a circle passes through the points P(3, 5) and Q(-1, 3) has radius $\sqrt{10}$, find

- The equation of the circle,
- The equation of the line which passes through the center and the mid-point of PQ.

4. Show that the line $4y = x - 3$ touches the circle $x^2 + y^2 - 4x - 8y + 3 = 0$

5. The equation of the circle, C is $x^2 + y^2 - x - 5y + 4 = 0$.

Find

- The coordinates of the center of C and the radius of C.
- The coordinates of the points when the circle C cuts the y-axis.
- The equation of the line which passes through the center of circle C and is parallel to the y-axis.