

Use completing the square to rewrite the equation in circle form and find center and radius.

1. $x^2 - 8x + y^2 + 6y = 11$

2. $x^2 + 4x + y^2 - 16y = -4$

3. $x^2 + y^2 - 18y = 0$

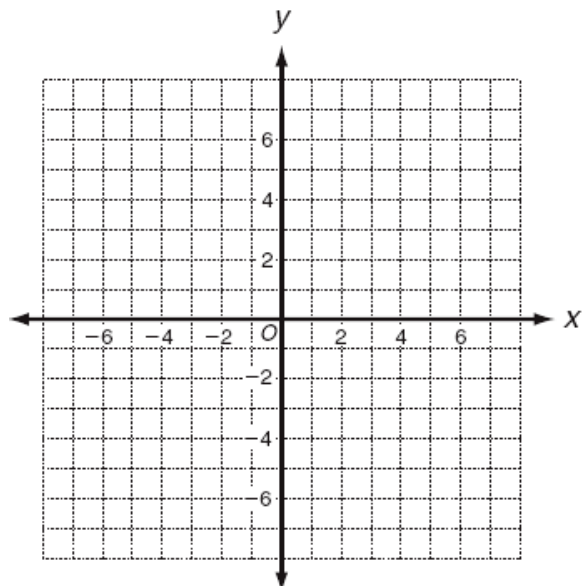
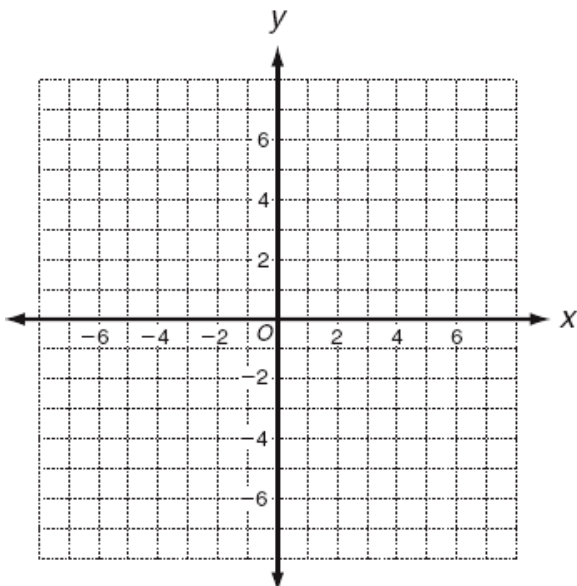
4. $x^2 + y^2 - 14x + 2y + 10 = 0$

Identify the center and radius the circle and sketch the circle.

5. $(x+3)^2 + (y-2)^2 = 16$

Sketch the circle. Find the radius and write the equation of the circle.

6. circle with center (4, -3) that is tangent to the y-axis



Write the equation of each circle.

7. circle with center $(-5,0)$ and radius 12

8. circle that passes through $(4, 1)$ and has center $(-2, 9)$

9. circle with area 49π and center $(8, -2)$