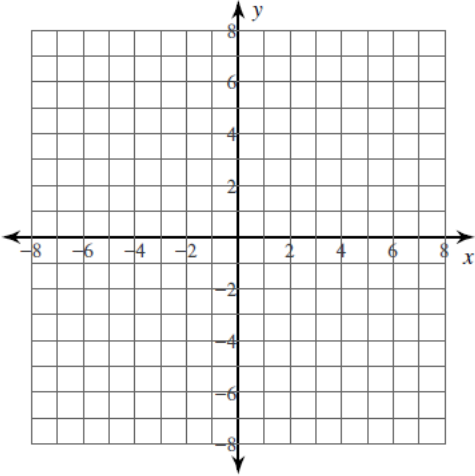


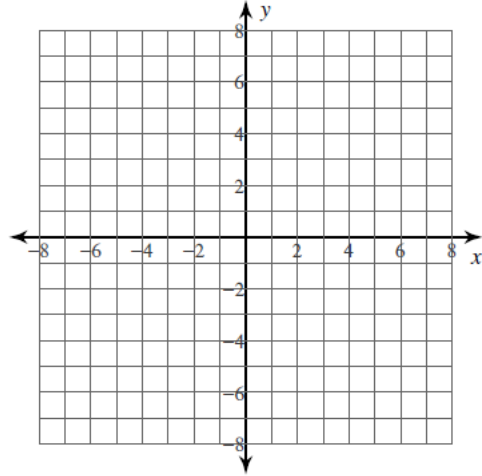
EQUATIONS OF CIRCLES

Identify the center and radius of each. Then sketch the graph.

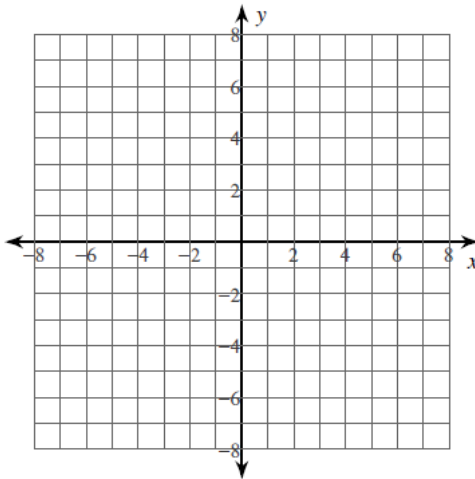
1) $(x - 1)^2 + (y + 3)^2 = 4$



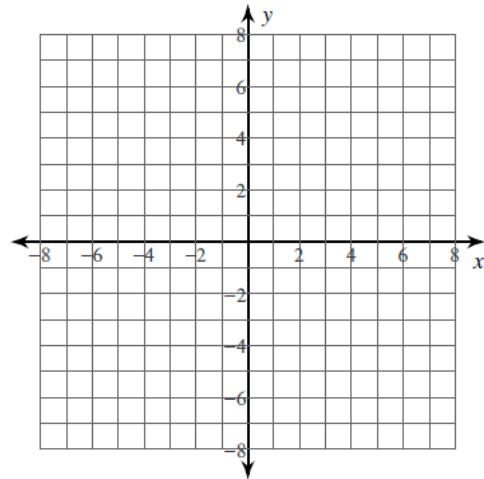
2) $(x - 2)^2 + (y + 1)^2 = 16$



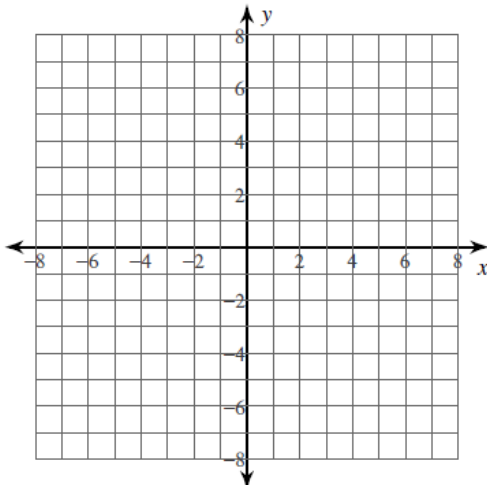
3) $(x - 1)^2 + (y + 4)^2 = 9$



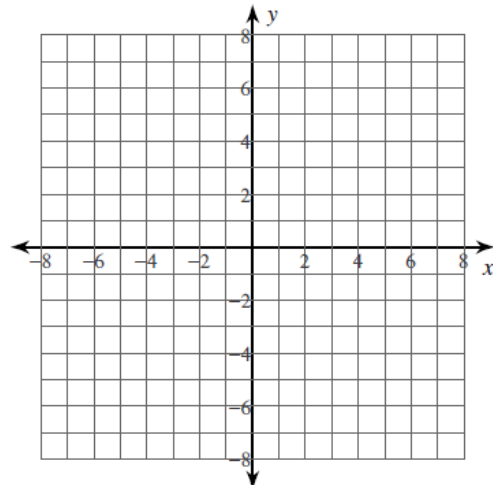
4) $x^2 + (y - 3)^2 = 14$



5) $y^2 + 4x - 20 - 2y = -x^2$

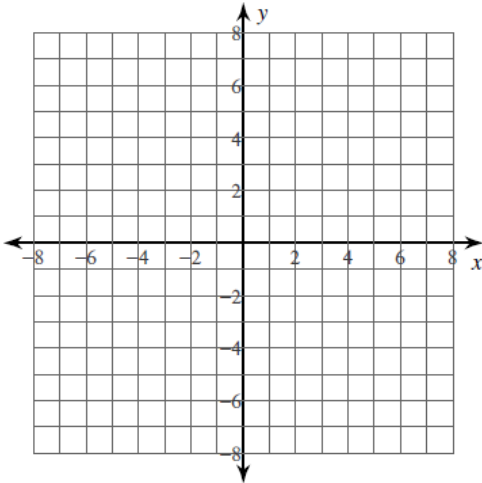


6) $-9 = -y^2 - x^2$

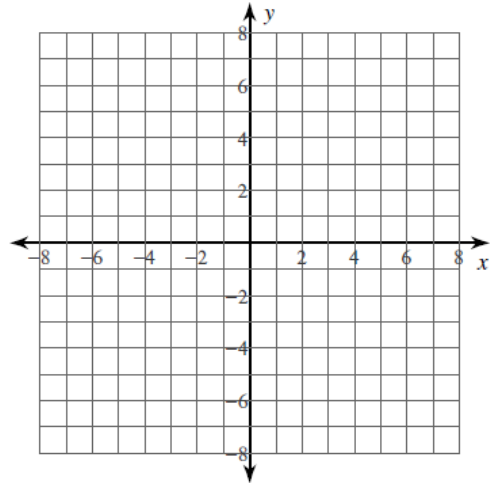


EQUATIONS OF CIRCLES

7) $9 = 2y - y^2 - 6x - x^2$



8) $16 + x^2 + y^2 - 8x - 6y = 0$



Use the information provided to write the equation of each circle.

9) Center: $(13, -13)$
Radius: 4

10) Center: $(-13, -16)$
Point on Circle: $(-10, -16)$

11) Ends of a diameter: $(18, -13)$ and $(4, -3)$

12) Center: $(10, -14)$
Tangent to $x = 13$

13) Center lies in the first quadrant
Tangent to $x = 8$, $y = 3$, and $x = 14$

14) Center: $(0, 13)$
Area: 25π