

Name _____
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Date _____
Geometry

Completing the Square with Circles

1. What is the center and radius of the circle with the following equations:

1. $x^2 + y^2 + 6x - 8y = 0$

2. $x^2 + y^2 + 10x - 4y - 6 = 1$

3. $x^2 + y^2 + 16x + 6y + 9 = 0$

4. $x^2 + y^2 - 12x - 14y = 15$

5. $x^2 + 8y + 10 + y^2 - 4x = 6$

6. $x^2 + 4x + 12 + y^2 - 2y - 1 = 22$

7. $y^2 + 6x + x^2 - 12y + 2 = 11$

8. $x^2 + y^2 + 6x - 10y + 4 = -5$

8. What are the coordinates of the center of a circle whose equation is

$$x^2 + y^2 - 16x + 6y + 53 = 0?$$

- 1) $(-8, -3)$
- 2) $(-8, 3)$
- 3) $(8, -3)$
- 4) $(8, 3)$

9. The equation $x^2 + y^2 - 2x + 6y + 3 = 0$ is equivalent to

- 1) $(x - 1)^2 + (y + 3)^2 = -3$
- 2) $(x - 1)^2 + (y + 3)^2 = 7$
- 3) $(x + 1)^2 + (y + 3)^2 = 7$
- 4) $(x + 1)^2 + (y + 3)^2 = 10$

10. The equation of a circle is $x^2 + y^2 + 6y = 7$. What are the coordinates of the center and the length of the radius of the circle?

- 1) center $(0, 3)$ and radius 4
- 2) center $(0, -3)$ and radius 4
- 3) center $(0, 3)$ and radius 16
- 4) center $(0, -3)$ and radius 16

11. What are the coordinates of the center and length of the radius of the circle whose equation is $x^2 + 6x + y^2 - 4y = 23$?

- 1) $(3, -2)$ and 36
- 2) $(3, -2)$ and 6
- 3) $(-3, 2)$ and 36
- 4) $(-3, 2)$ and 6

12. If $x^2 + 4x + y^2 - 6y - 12 = 0$ is the equation of a circle, the length of the radius is

- 1) 25
- 2) 16
- 3) 5
- 4) 4