

CONICS

Name Schlansky
Mr. Schlansky

Date _____
Geometry

Completing the Square with Circles Multiple Choice

1. 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

$$x^2 + y^2 + 6x - 4y - 23 = 0$$

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$$\begin{aligned} A &= 1 \\ B &= 6 \\ C &= -4 \\ D &= -23 \end{aligned}$$

2. The equation of a circle is $x^2 + y^2 + 12x = -27$. What are the coordinates of the center and the length of the radius of the circle?

- 1) center (6, 0) and radius 3
2) center (6, 0) and radius 9
③ center (-6, 0) and radius 3
4) center (-6, 0) and radius 9

$$x^2 + y^2 + 12x + 0y + 27 = 0$$

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$$\begin{aligned} A &= 1 \\ B &= 12 \\ C &= 0 \\ D &= 27 \end{aligned}$$

3. Find the center and radius of a circle whose equation is $x^2 + y^2 - 16x + 6y + 53 = 0$?

- 1) center (-8, 3) and radius 20
2) center (-8, 3) and radius $2\sqrt{5}$
3) center (8, -3) and radius 20
④ center (8, -3) and radius $2\sqrt{5}$

$$\begin{aligned} \text{radius} &= 4.4721 \\ 2\sqrt{5} &= 4.4721 \end{aligned}$$

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$$\begin{aligned} A &= 1 \\ B &= -16 \\ C &= 6 \\ D &= 53 \end{aligned}$$

4. Find the center and radius of a circle whose equation is $x^2 + y^2 - 2x + 6y - \frac{15}{4} = 0$?

- 1) center = (-1, 3); radius = $\frac{25}{4}$
2) center = (-1, 3); radius = $\frac{5}{2}$
3) center = (1, -3); radius = $\frac{25}{4}$
④ center = (1, -3); radius = $\frac{5}{2}$

$$\begin{aligned} \text{radius} &= 2.5 \\ \frac{5}{2} &= 2.5 \end{aligned}$$

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$$\begin{aligned} A &= 1 \\ B &= -2 \\ C &= 6 \\ D &= -\frac{15}{4} \end{aligned}$$

5. An equation of circle M is $x^2 + y^2 + 6x - 2y + 1 = 0$. What are the coordinates of the center and the length of the radius of circle M ?

- 1) center (3, -1) and radius 9
2) center (3, -1) and radius 3
3) center (-3, 1) and radius 9
④ center (-3, 1) and radius 3

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$$\begin{aligned} A &= 1 \\ B &= 6 \\ C &= -2 \\ D &= 1 \end{aligned}$$

6. 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

$$x^2 + y^2 + 0x + 6y - 7 = 0$$

Conics: $A=1$
 $B=0$
 $C=6$
 $D=-7$

7. What are the coordinates of the center and length of the radius of the circle whose equation is $x^2 + y^2 + 2x - 16y + 49 = 0$?

- 1) center (1,-8) and radius 4
- ② center (-1,8) and radius 4
- 3) center (1,-8) and radius 16
- 4) center (-1,8) and radius 16

Conics: $A=1$
 $B=2$
 $C=-16$
 $D=49$

8. What are the coordinates of the center and the length of the radius of the circle whose equation is $x^2 + y^2 - 12y - 20.25 = 0$?

- ① center (0,6) and radius 7.5
- 2) center (0,-6) and radius 7.5
- 3) center (0,12) and radius 4.5
- 4) center (0,-12) and radius 4.5

$$x^2 + y^2 + 0x - 12y - 20.25 = 0$$

Conics: $A=1$
 $B=0$
 $C=-12$
 $D=-20.25$

9. What is an equation of a circle whose center is (1,4) and diameter is 10?

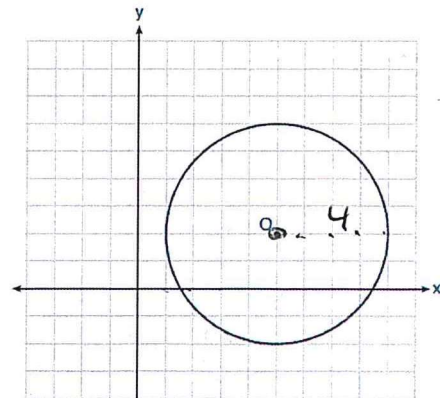
- ① $x^2 - 2x + y^2 - 8y = 8$ center: (1,4) r=5
- 2) $x^2 + 2x + y^2 + 8y = 8$
- 3) $x^2 - 2x + y^2 - 8y = 83$
- 4) $x^2 + 2x + y^2 + 8y = 83$

radius = 5

Type in each answer

10. What is an equation of circle O shown in the graph below?

- 1) $x^2 + 10x + y^2 + 4y = -13$
- ② $x^2 - 10x + y^2 - 4y = -13$ center: (5,2) r=4
- 3) $x^2 + 10x + y^2 + 4y = -25$
- 4) $x^2 - 10x + y^2 - 4y = -25$



center: (5,2)
radius: 4