

1. Complete the square: $x^2 + 8x + \underline{\hspace{1cm}} = 3 + \underline{\hspace{1cm}}$ becomes $(x + \underline{\hspace{1cm}})^2 = \underline{\hspace{1cm}}$

2. What are the coordinates of the center and the radius of this circle? $(x + 6)^2 + (x - 7)^2 = 11$

Center:

Radius =

3. $x^2 + y^2 + 4x - 2y = -1$

The equation of a circle in the xy-plane is shown above. What is the radius of the circle?

A) 2 B) 3 C) 4 D) 9

4. A reasearcher conducted a survey to determine whether people in a certain large town prefer watching sports on television to attending the sporting event. The researcher asked 117 people who visited a local restaurant on a Saturday, and 7 people refused to respond. Which of the following factors makes it least likely that a reliable conclusion can be drawn about the sports-watching preferences of all people in the town?

- A) Sample size
- B) Population size
- C) The number of people who refused to respond
- D) Where the survey was given

1. Complete the square: $x^2 + 8x + \underline{16} = 3 + \underline{16}$ becomes $(x + \underline{\quad})^2 = \underline{\quad}$

$$\begin{array}{c} \downarrow \frac{b}{2} \quad \uparrow (\frac{b}{2})^2 \\ (x + 4)^2 = 19 \end{array}$$

2. What are the coordinates of the center and the radius of this circle? $(x + 6)^2 + (x - 7)^2 = 11$

Center: $(-6, 7)$ Radius = $\sqrt{11}$

$$(x-h)^2 + (y-k)^2 = r^2$$

center: (h, k)
radius = r

3. $x^2 + y^2 + 4x - 2y = -1$

The equation of a circle in the xy-plane is shown above. What is the radius of the circle?

A) 2 B) 3 C) 4 D) 9

• complete the square for both x & y

$$\begin{array}{c} x^2 + 4x \quad \xrightarrow{+4} \quad + y^2 - 2y \quad \xrightarrow{+1} \quad = -1 + 4 + 1 \\ \downarrow \quad \uparrow \quad \downarrow \quad \uparrow \\ (x+2)^2 \quad (y-1)^2 \\ (x+2)^2 + (y-1)^2 = 4 \end{array}$$

$$\begin{array}{l} r^2 = 4 \\ r = 2 \end{array}$$

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For a survey to give good results a survey must randomly select people representative of the entire population. Since only people at a particular restaurant are asked its likely ~~the~~ a sample of the entire population isn't represented equally.