

**DIRECTIONS:** Find an equation of the circle with the given center and radius.

1. Center:  $(3, 0)$ ; Radius: 3

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

3. Center:  $(2, -5)$ ; Radius: 8

$$(x - 2)^2 + (y + 5)^2 = 64$$

5. Center:  $(0, 0)$ ; Radius: 12

$$x^2 + y^2 = 144$$

7. Center:  $(6, 1)$ ; Radius:  $\sqrt{2}$

$$(x - 6)^2 + (y - 1)^2 = 2$$

2. Center:  $(0, -1)$ ; Radius: 1

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

4. Center:  $(-3, 1)$ ; Radius: 5

$$(x + 3)^2 + (y - 1)^2 = 25$$

6. Center:  $(-4, -2)$ ; Radius: 10

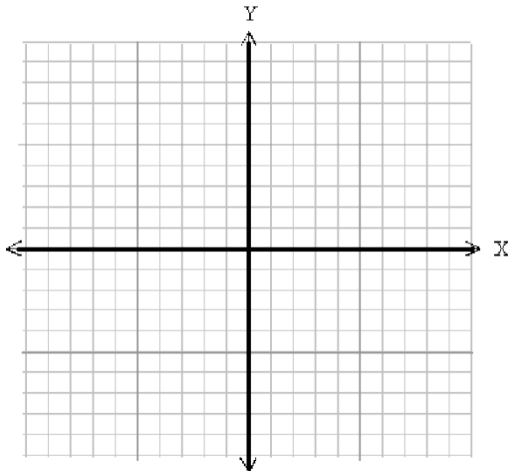
$$(x + 4)^2 + (y + 2)^2 = 100$$

8. Center:  $(-5, 3)$ ; Radius:  $\frac{1}{6}$

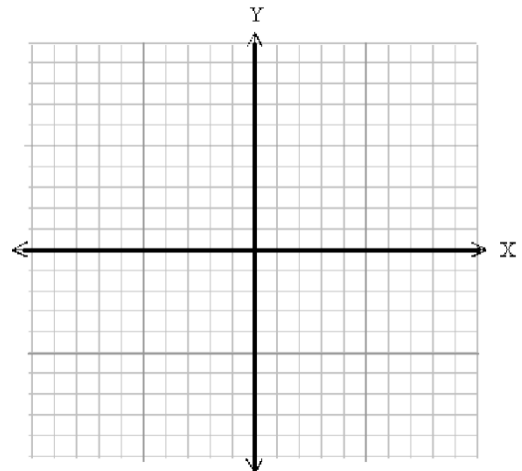
$$(x + 5)^2 + (y - 3)^2 = \frac{1}{36}$$

**DIRECTIONS:** Graph each equation. (Graphs appear on pages 3-5)

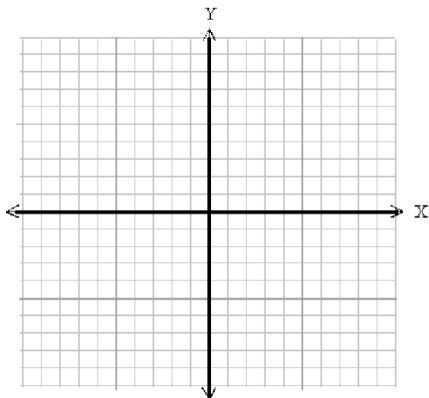
9.  $x^2 + y^2 = 4$



10.  $(x + 2)^2 + (y + 3)^2 = 81$



11.  $x^2 + (y + 6)^2 = 9$



**DIRECTIONS:** If the graph of the given equation is a circle, find its center and radius. If the equation has no graph, say so.

12.  $x^2 + y^2 - 81 = 0$

$$x^2 + y^2 = 81$$

Center:  $(0, 0)$

Radius: 9

13.  $x^2 + y^2 - 6x = 0$

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

Center:  $(3, 0)$

Radius: 3

14.  $x^2 + y^2 + 10x - 4y + 20 = 0$

$$(x + 5)^2 + (y - 2)^2 = 9$$

Center:  $(-5, 2)$

Radius: 3

15.  $x^2 + y^2 + 12x - 6y = 0$

$$(x + 6)^2 + (y - 3)^2 = 45$$

Center:  $(-6, 3)$

Radius:  $3\sqrt{5}$

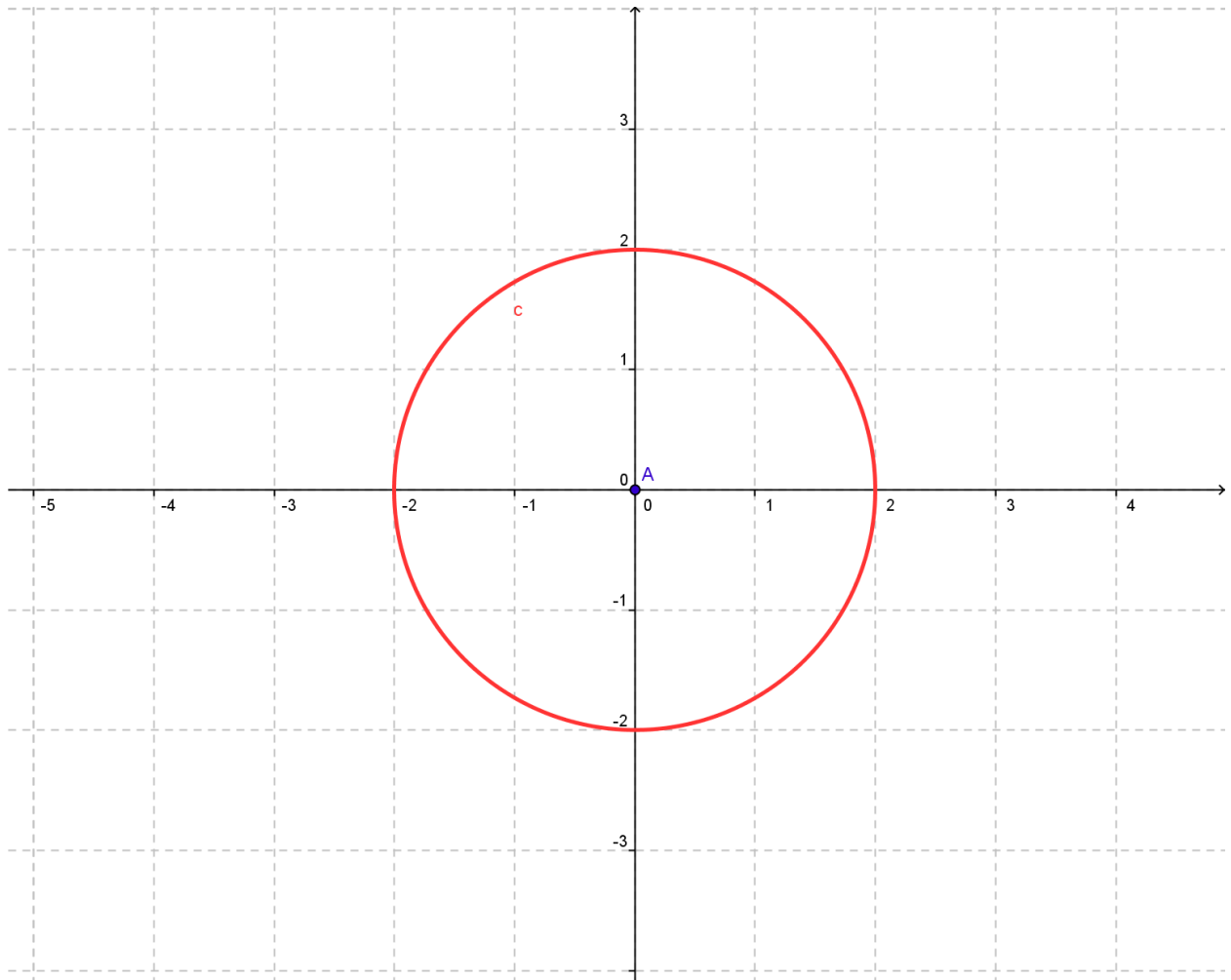
16.  $x^2 + y^2 - 5y + 4 = 0$

$$x^2 + \left(y - \frac{5}{2}\right)^2 = \frac{9}{4}$$

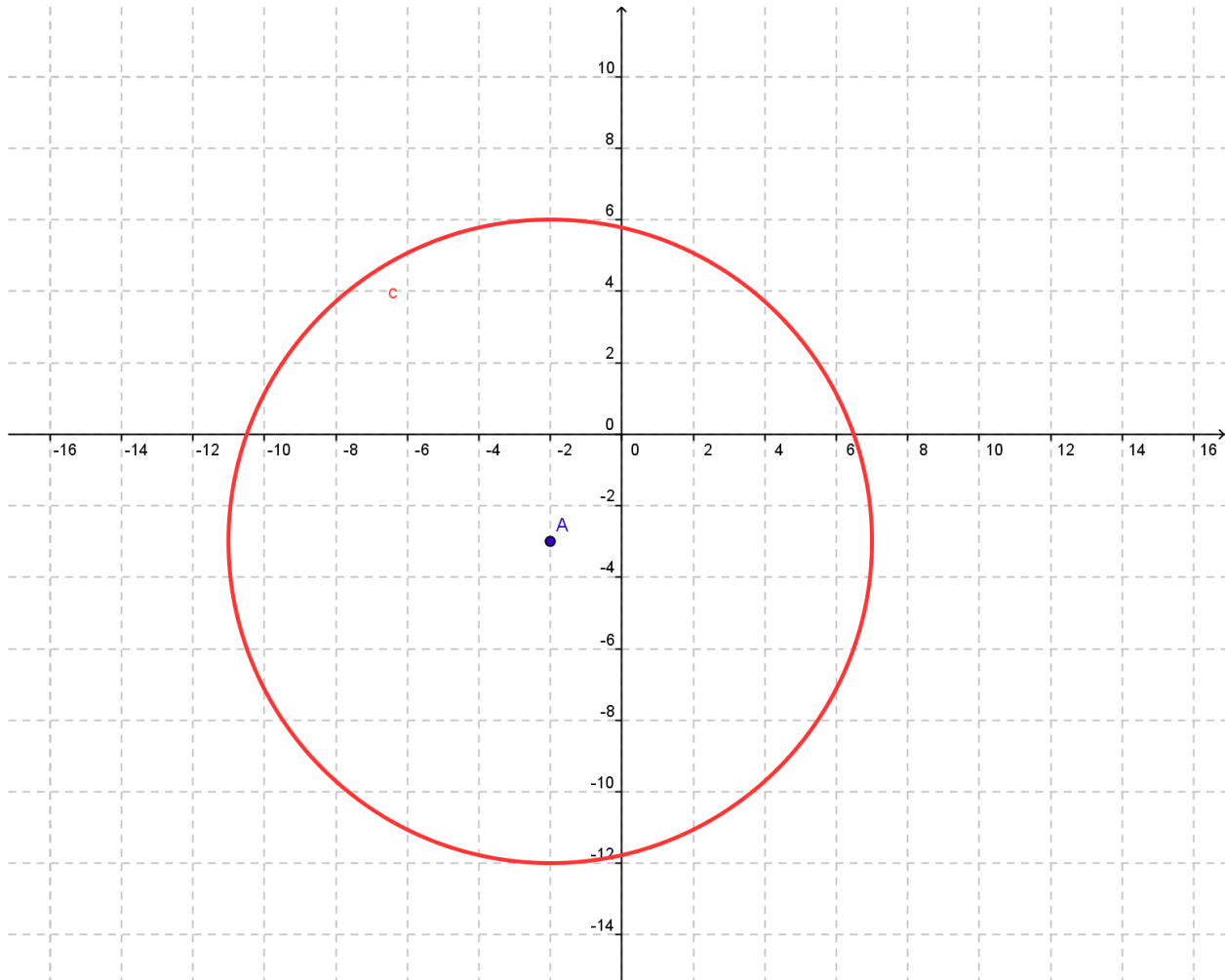
Center:  $\left(0, \frac{5}{2}\right)$

Radius:  $\frac{3}{2}$

Graph for #9



Graph for #10 (notice counting by twos on this answer)



Graph for #11

