

Bellwork

Given circle M has an area of 3140 cm^2 , and it has a sector AMC with area 314 cm^2 .

Find the indicated measure.

1. Radius of M.

$$3140 = \pi r^2$$

$$\frac{3140}{\pi} = \frac{\pi r^2}{\pi}$$

$$r \approx 31.61$$

$$\sqrt{999.49} \approx \sqrt{r^2}$$

2. Circumference of M.

$$C = 2\pi(31.61)$$

$$C \approx 198.64$$

3. $m\widehat{AC}$

$$314 = \frac{m\widehat{AC}}{360} \cdot 3140$$

$$m\widehat{AC} = \frac{314(360)}{3140} = 36^\circ$$

4. Length of \widehat{AC}

$$L_{\widehat{AC}} = \frac{36}{360} \cdot 2\pi(31.61)$$

$$L_{\widehat{AC}} = 19.86$$

Graphing Circles

Need to know:

1. The center of the circle
2. The radius of the circle

Standard Form of a Circle:

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

Where: (h, k) = the center of the circle
 r = the radius of the circle

How to Graph

Procedure:

Step 1: Identify the center of the circle.
Plot this point.

Step 2: Identify the radius of the circle.
Starting at the center go r units up, and make a dot.
Starting at the center go r units down, make a dot.
Starting at the center go r units left, make a dot.
Starting at the center go r units right, make a dot.

Step 3: Draw the circle connecting the dots created in Step 2 as best as you can.

Examples

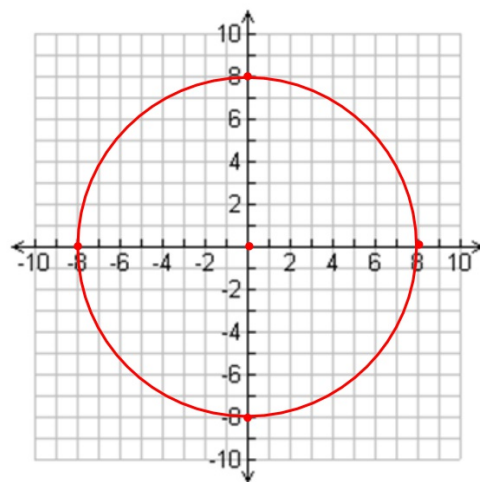
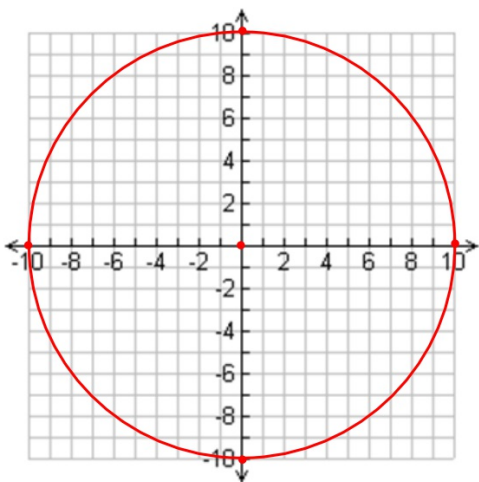
Graph each of the following circles:

1. $x^2 + y^2 = 100$

2. $x^2 + y^2 = 64$

Center at $(0, 0)$
Radius = $\sqrt{100} = 10$

Center at $(0, 0)$
Radius = $\sqrt{64} = 8$



Examples

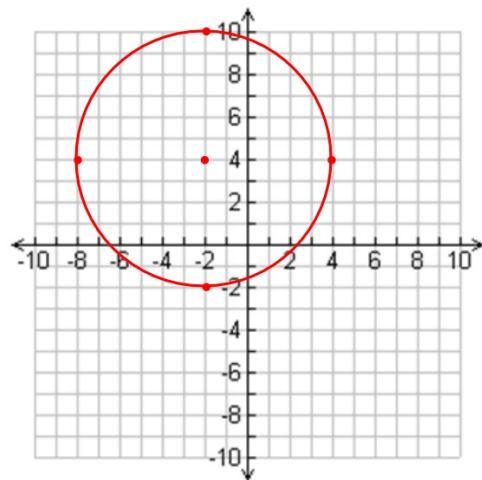
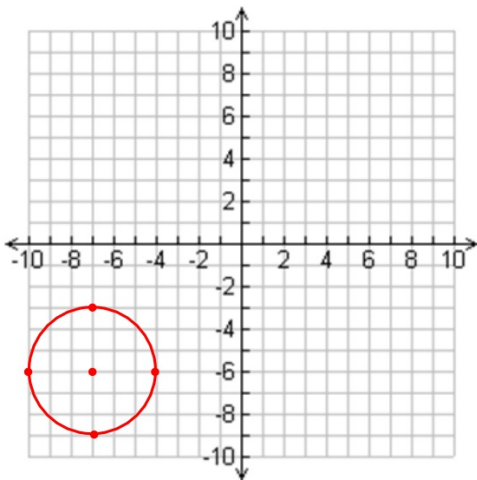
Graph each of the following circles:

3. $(x + 7)^2 + (y + 6)^2 = 9$

4. $(x + 2)^2 + (y - 4)^2 = 36$

Center at $(-7, -6)$
Radius = $\sqrt{9} = 3$

Center at $(-2, 4)$
Radius = $\sqrt{36} = 6$



Examples

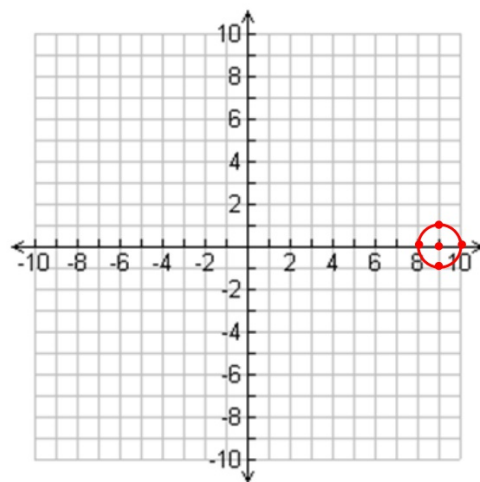
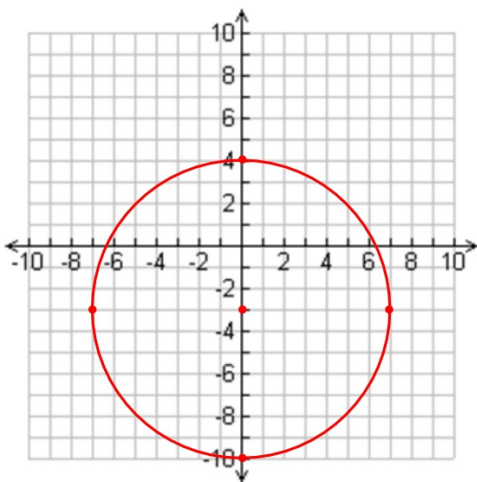
Graph each of the following circles:

5. $x^2 + (y + 3)^2 = 49$

6. $(x - 9)^2 + y^2 = 1$

Center at $(0, -3)$
Radius = $\sqrt{49} = 7$

Center at $(9, 0)$
Radius = $\sqrt{1} = 1$



Examples

Graph each of the following circles:

7. $(x + 5)^2 + (y - 3)^2 = 20$

8. $(x - 4)^2 + y^2 = 10$

Center at $(-5, 3)$
Radius = $\sqrt{20} \approx 4.47$

Center at $(4, 0)$
Radius = $\sqrt{10} \approx 3.16$

