8.1

Precalculus Conic Sections-Circles

Name_____ Date_____ Per_____

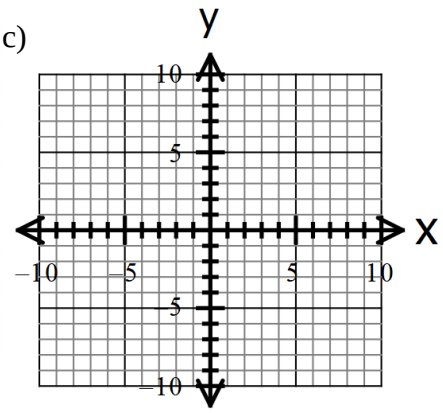
(a) Write the standard form of the equation of each circle of radius *r* and center (*h*, *k*).
(b) Write the general form of the equation of each circle.
(c) Graph the circle.

1. $r=2;\ (h,k)=(0,0)$

a)

b)

c)

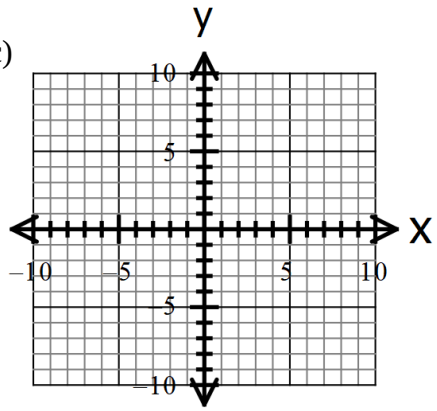


2. $r=3;\ (h,k)=(2,0)$

a)

b)

c)

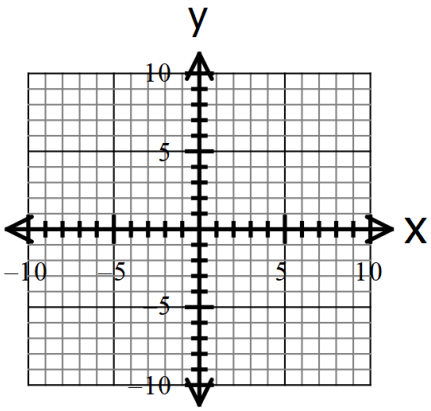


3. $r=5;\ (h,k)=(4,-3)$

a)

b)

c)

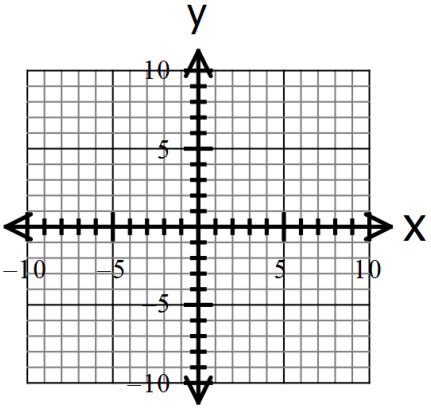


4. $r=4;\ (h,k)=(-5,-2)$

a)

b)

c)

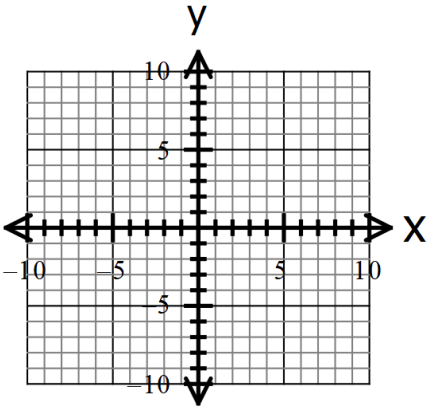


5. $r=1/2;\ (h,k)=(0,-1/2)$

a)

b)

c)



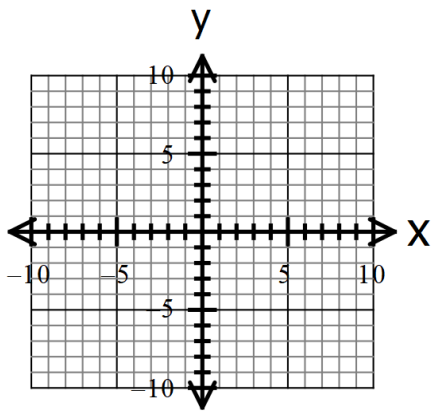
(a) Find the center (*h*, *k*) and radius *r* of each circle.
(b) Find the intercepts, if any.
(c) Graph the circle.

6. $(x-3)^2+(y+2)^2=16$

a)

b)

c)

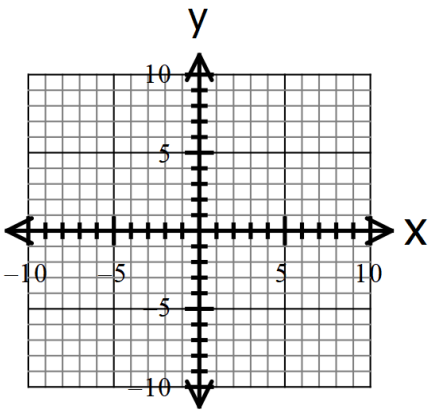


7. $3x^2+3(y-1)^2=150$

a)

b)

c

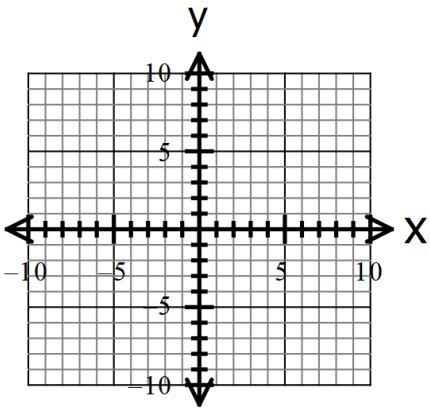


8. $x^2+y^2+12x+11=0$

a)

b)

c)

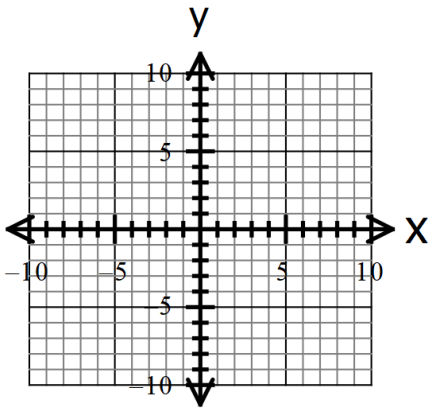


9. $x^2+y^2+14x-16y+109=0$

a)

b)

c)

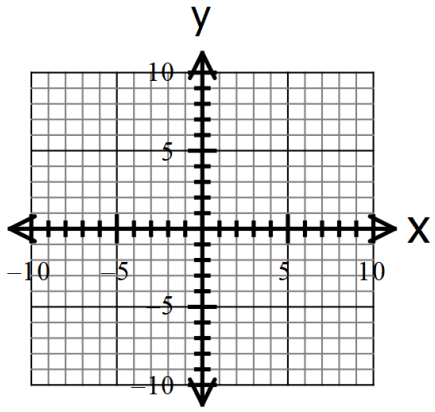


10. $x^2 + y^2 - 10x - 4y + 17 = 0$

a)

b)

c)

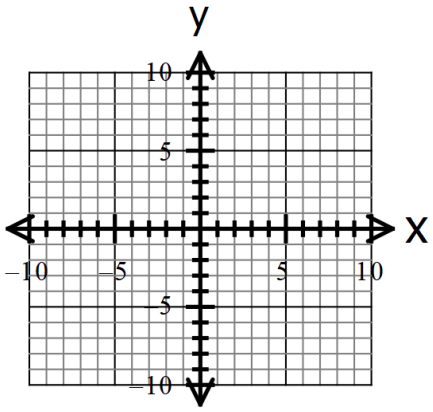


11. $2x^2 + 2y^2 + 12x + 4y - 78 = 0$

a)

b)

c)



Use the information provided to write the standard form of the equation of the circle.

12. Center: $(-6,5)$, Point on circle: $(-8,8)$

13. Endpoints of a diameter: $(-5,7)$ and $(3,13)$

14. Endpoints of a diameter: $(-6,14)$ and $(-7,1)$

15. Center: $(-9,-2)$, tangent to (touches) the line $x=-3$.

Solve the problem.

16. The original Ferris wheel was built in 1893 by George W. Ferris for the 1893 World's Fair in Chicago. It had a maximum height of 264 feet and a wheel diameter of 250 feet. Find an equation for the wheel if the origin is on the ground and the center of the wheel is on the *y*-axis.

17. Find the area of the shaded region in the figure, assuming the quadrilateral inside the circle is a square.