Circles

A circle is the set of all points (x,y) that are equidistant from a fixed point, called the center of the circle.

The distance r between the center and any point (x,y) on the circle is the radius.

The point (h, k) is the center of the circle.

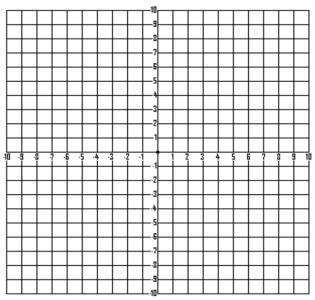
The standard form of the equation of a circle is

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

Graph $(x - 6)^2 + (y - 2)^2 = 4$

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

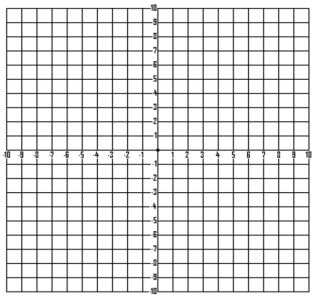
1. Idenfity the Center (h, k):
2. Find the radius:
3. Plot 4 points that are a radius away from the center.
4. Draw a circle through the points.



Graph $(x + 3)^2 + (y + 1)^2 = 9$

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

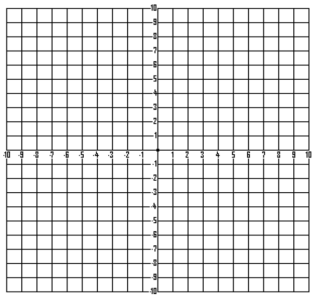
1. Idenfity the Center (h, k):
2. Find the radius:
3. Plot 4 points that are a radius away from the center.
4. Draw a circle through the points.



Graph $x^2 + (y + 3)^2 = 25$

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

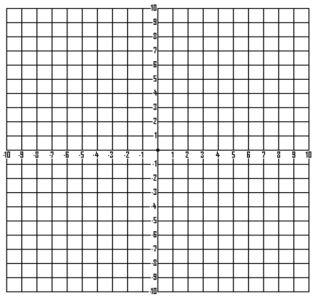
1. Idenfity the Center (h, k):
2. Find the radius:
3. Plot 4 points that are a radius away from the center.
4. Draw a circle through the points.



Graph $(x - 4)^2 + y^2 = 9$

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

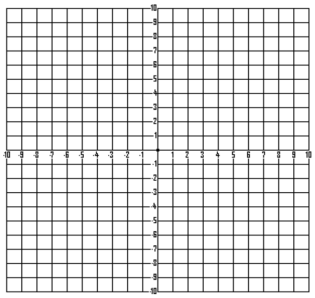
1. Idenfity the Center (h, k):
2. Find the radius:
3. Plot 4 points that are a radius away from the center.
4. Draw a circle through the points.



Graph $x^2 + y^2 = 36$

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

1. Idenfity the Center (h, k):
2. Find the radius:
3. Plot 4 points that are a radius away from the center.
4. Draw a circle through the points.



Writing the equation of a circle: $(x-h)^2+(y-k)^2=r^2$

1. Center is (9, 3) and a radius of 4.
2. Center is (-4, 2) and a radius of 3.
3. Center is (5, -6) and a radius of 5.
4. Center is (0, 4) and a radius of 7.
5. Center is (0, 0) and a radius of 9.
6. Center is (-8, 0) and a radius of 11.

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

Given the following center and radius, write the standard form of the equation.

1. **Center (-4, 10) Radius 6**
2. **Center (15, -3) Radius 7**
3. **Center (-3, 7) Radius 10**
4. **Center (-5, -10) Radius 8**
5. **Center (0, 0) Radius 9**
6. **Center (0, 5) Radius 5**

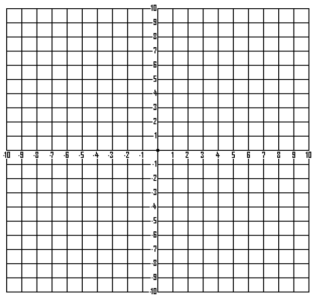
Practice Worksheet: $(x-h)^2+(y-k)^2=r^2$

Find the center and radius of the circle given the following equation and graph the equation.

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

   Center:

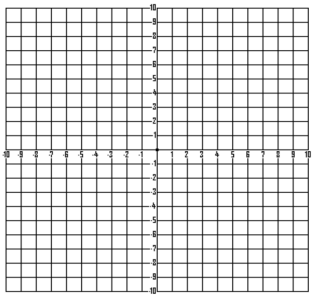
   Radius:



8. $(x+7)^2+(y+2)^2=1$

   Center:

   Radius:



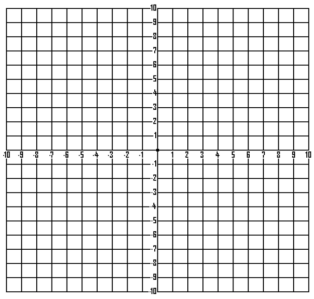
Practice Worksheet: $(x-h)^2+(y-k)^2=r^2$

Find the center and radius of the circle given the following equation and graph the equation.

9. $(x+1)^2+(y-7)^2=9$

   Center:

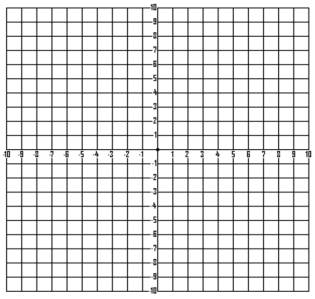
   Radius:



10. $(x-3)^2+(y-1)^2=81$

    Center:

    Radius:



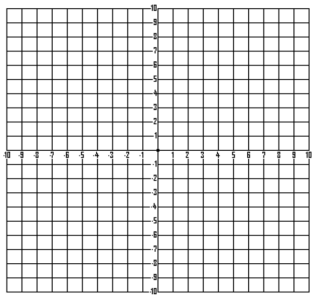
Practice Worksheet: $(x-h)^2+(y-k)^2=r^2$

Find the center and radius of the circle given the following equation and graph the equation.

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

    Center:

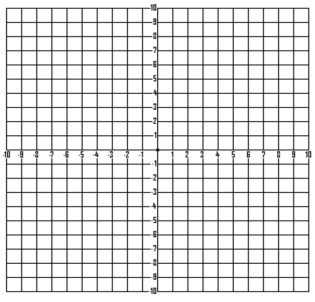
    Radius:



12. $(x-4)^2+y^2=64$

    Center:

    Radius:



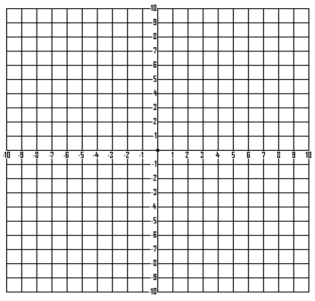
Practice Worksheet: $(x-h)^2+(y-k)^2=r^2$

Find the center and radius of the circle given the following equation and graph the equation.

13. $x^2+(y+8)^2=9$

    Center:

    Radius:



14. $x^2+y^2=49$

    Center:

    Radius: