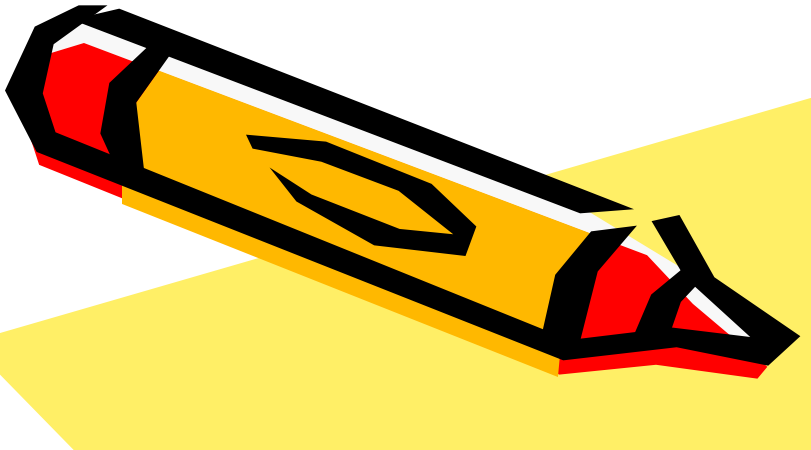
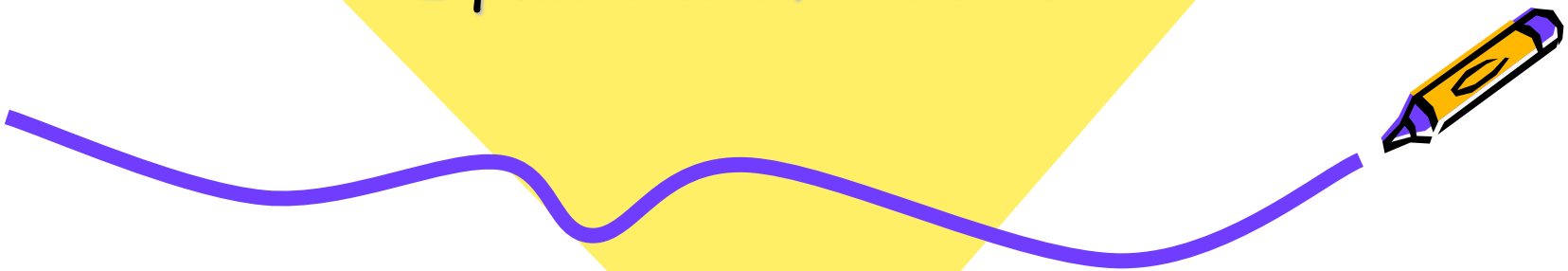


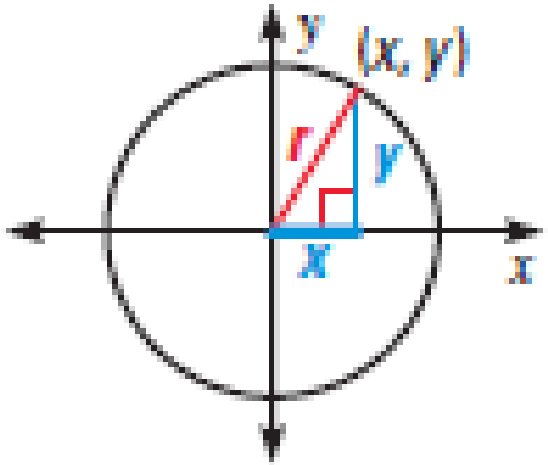
# Geometry

## Equations of Circles



# Equations of Circles

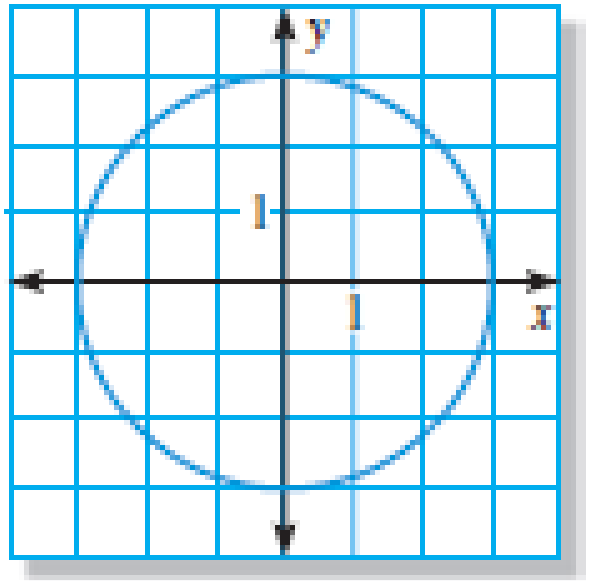
Let (x,y) represent any point on a circle with center at the origin and radius r. By the Pythagorean theorem, $x^2 + y^2 = r^2$



# Equations of Circles

Therefore the equation of the circle below is:

$$x^2 + y^2 = 3^2 \quad or \quad x^2 + y^2 = 9$$



# Equations of Circles

The Standards Form of the Equation of a Circle is:

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

Where h and k represent the x and y coordinates of the center of the circle respectively, and r represents the radius of the circle.

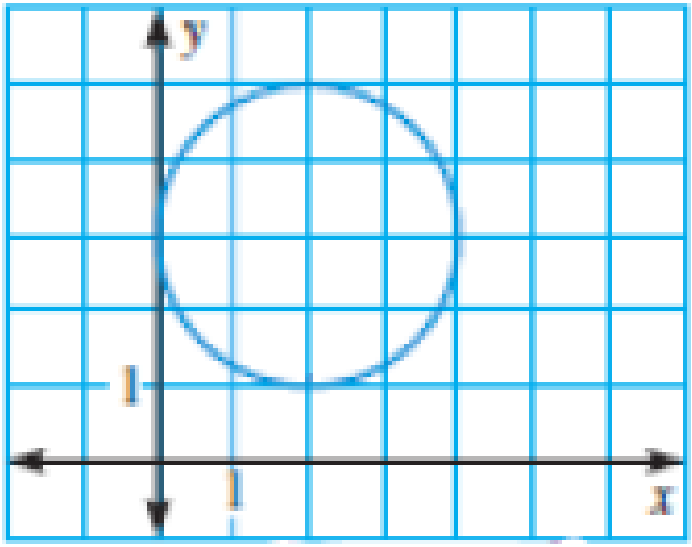
# Equations of Circles

Therefore the equation of the circle below is:

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

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

$$(x-2)^2+(y-3)^2=4$$



# Equations of Circles

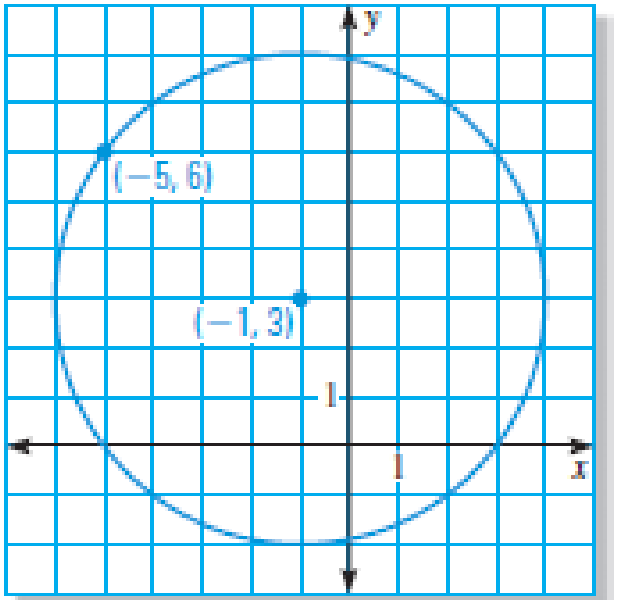
Write the equation of the circle.

*Determine the center and radius:* *center (-1, 3) as shown*

*radius = 5 (use distance formula)*

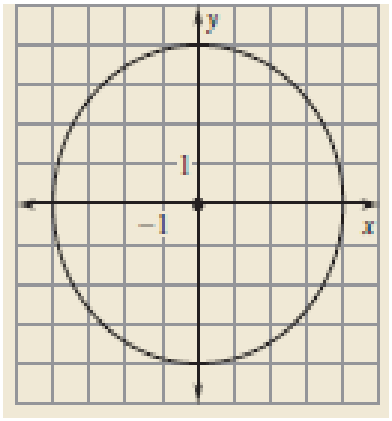
*Therefore:*

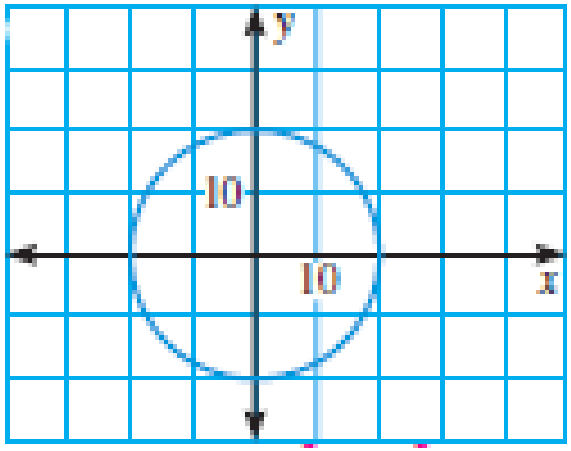
$$(x+1)^2+(y-3)^2=25$$

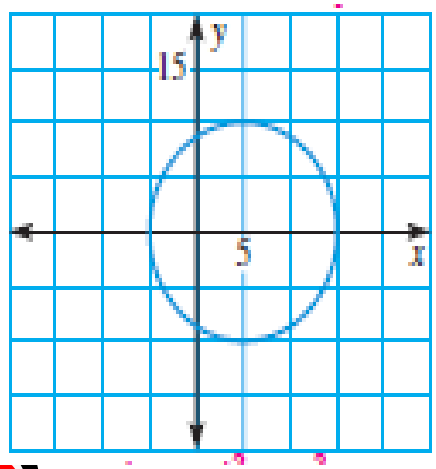


# Equations of Circles

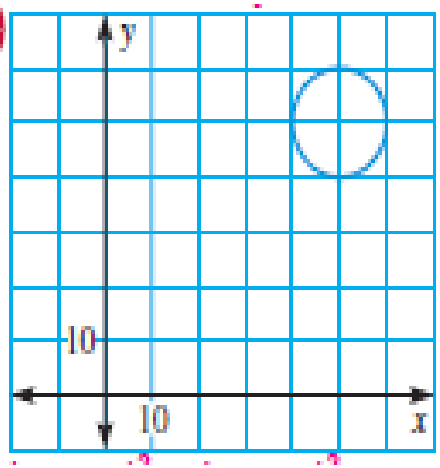
Write the equation of the circle (note the scale on each graph).




7.

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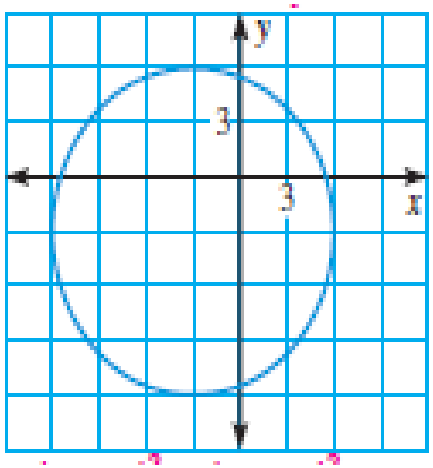


# Equations of Circles

Write the equation of the circle.

1. Center (0,-9) and Radius 4.2

2. Center (-2,3) and Radius 3.8

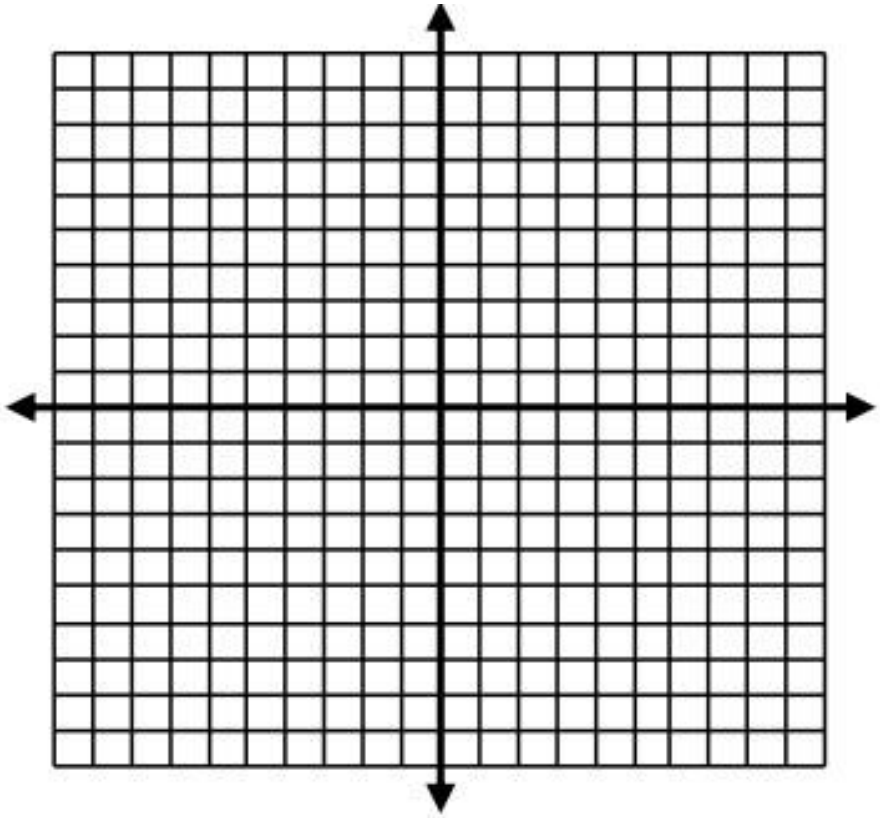
3. Center (0,0) & Point on circle (0,6)

4. Center (1,2) & Point on Circle (4,2)

# Equations of Circles

Graph the circle.

$(x+5)^2+(y-3)^2=9$



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