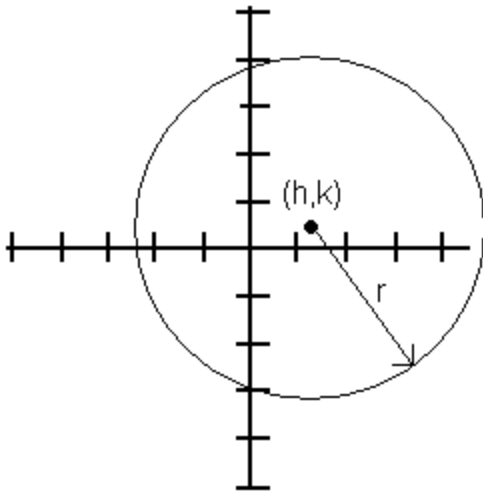


Introduction to Circles

Find a relationship between the x and y coordinate of any point that lies on the circle that is centered at the point (h, k) and has a radius of r .



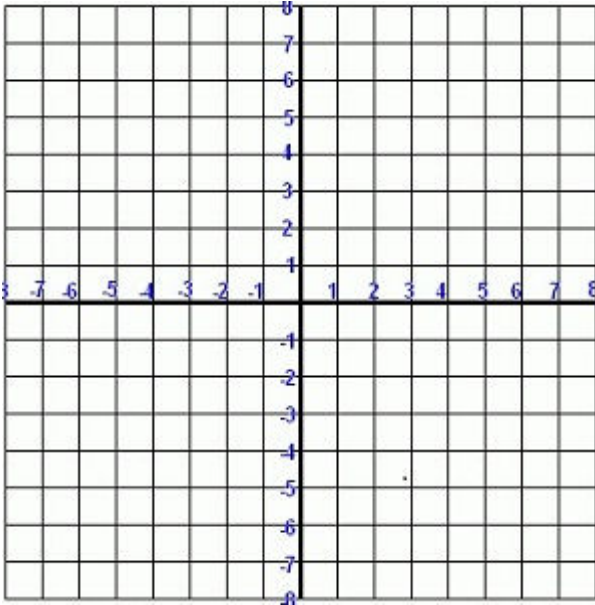
A circle whose center is the point (h, k) with a radius of r has the equation:

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

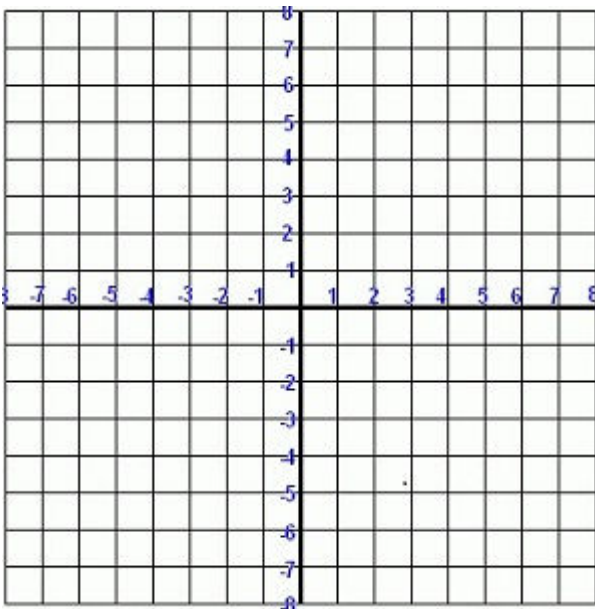
This is called the standard equation of a circle

Determine the center and the radius of the circles below and then draw the graph of the equation:

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



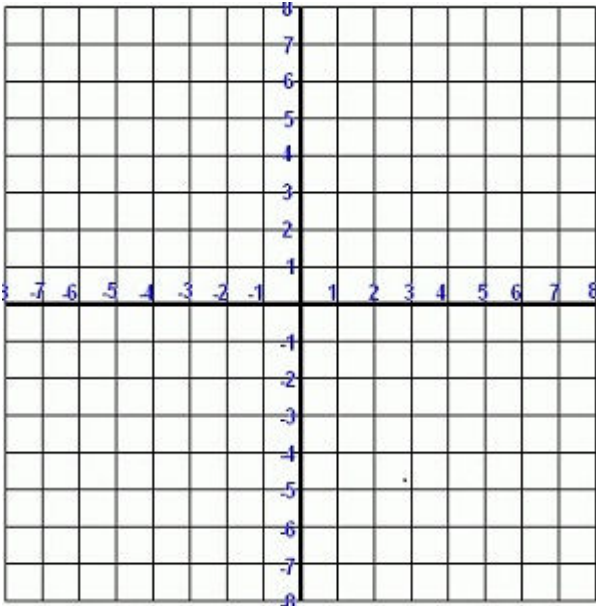
$$(x - 2)^2 + (y - 3)^2 = 10$$



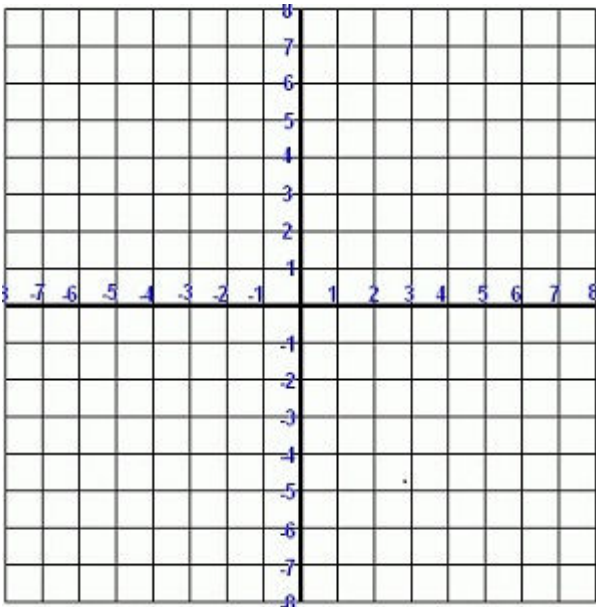
Determine the equation of the circle, in standard form and expanded form, that is centered at the point $(1, -3)$ and has a radius of 5.

Determine the standard form of the equation of the circle that has diameters at $(3, -1)$ and $(-1, -7)$.

Sketch the graph of the equation $5x^2 + 5y^2 = 240$



Sketch the graph of the equation $x^2 + y^2 + 4x - 8y - 16 = 0$



Sketch the graph of the equation $4x^2 + 4y^2 - 24x + 5y - 10 = 0$

