

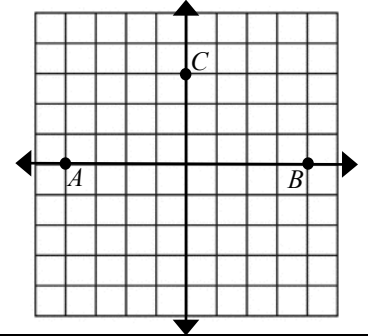
Aim: Circles and Ellipses

I. Do Now:

1. Write an equation for the parabola with focus at $(-8, -5)$ whose directrix is $x = 1$.

2. Complete the square to put the following circle equation in center-radius form
 $x^2 + y^2 - 10x + 6y + 18 = 0$

*3. Point C 's total distance from point A and point B is 10. Why? Plot other points with the same property (combined distance from A to B is 10). Connect them. What do you notice?

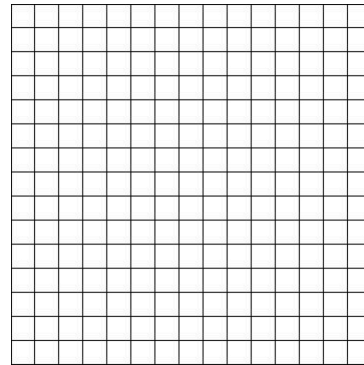
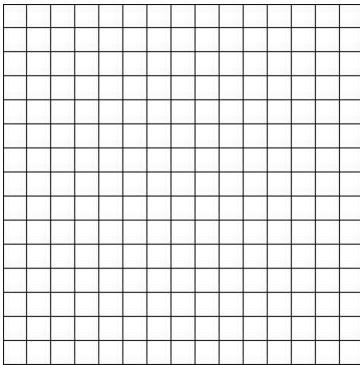


II. Circles

A circle is defined as the set of all points equidistant from a fixed point called the center. Convert each equation into center-radius form and sketch its graph:

4. $x^2 + y^2 - 6x + 4y = -12$

5. $x^2 + y^2 - 6x + 8y = -25$



III. Ellipse: The set of all points whose combined distance from two fixed points (called the foci) is constant.

First, we'll consider ellipses whose equations have the form $Ax^2 + By^2 = E$.

Sketch the graph of each ellipse.

6. $9x^2 + 16y^2 = 144$

7. $x^2 + 9y^2 = 9$

