2.2 Circles

Learning Objectives:
- Identify the center and radius of a circle from the standard form.
- Create the equation of a circle using the center and the radius.
- Convert the general form equation of a circle to standard form.

**Center Radius Form of a Circle**

Draw the first graph:

![Graph](image1)

The radius is ______________________

The center is ______________________

Using the distance formula: __________________________________________________________

The equation: __________________________________________________________

Draw the second graph:

![Graph](image2)

The radius is ______________________

The center is ______________________
Using the distance formula: 

The equation: 

Example 1: \((x + 2)^2 + (y - 1)^2 = 3^2\)

The center is ______________
The radius is ______________

Example 2: \((x + 1)^2 + (y + 1)^2 = 2^2\)

The center is ______________
The radius is ______________

**General Form of a Circle** 

The example of general form of a circle is given as 

________________________

Remember the standard for looks like ____________________________
Center is _________________
Radius is _________________
From standard form you ______________________________ to get the general form.
The way we get back is by _________________________________.

Completing the square:
________________________________________       Copy down original equation
________________________________________       ______________________________________
________________________________________       ______________________________________
The center is at ___________________________
The radius is _____________________________

Graphing Circles

Example 1: $(x + 3)^2 + (y - 2)^2 = 16$
________________________________
________________________________
________________________________
________________________________

Example 2: $x^2 + y^2 + 4x - 6y + 12 = 0$
________________________________________
________________________________________
________________________________________
________________________________________
Nonexistent Circles

1. ______________________________________________________________________

2. ______________________________________________________________________

3. ______________________________________________________________________