Graphing Circles

Previously we graphed parabolas using a knowledge of their shape and how to manipulate them. Now we will graph circles using similar ideas.

\[ y - 1 = (x - 3)^2 \]

Remember with a parabola like this we start with the point \((3, 1)\). An example of a circle is

\[ (x - 3)^2 + (y - 1)^2 = 2^2. \]

Just like with the parabola we will start with the point \((3, 1)\). The \(2^2\) indicates that the radius is 2. This means the circle contains the points

- 2 units above the center \((3, 3)\)
- 2 units below the center \((3, -1)\)
- 2 units to the right of the center \((5, 1)\)
- 2 units to the left of the center \((1, 1)\).

After graphing these four points we can sketch a circle through them. Note that the center is not part of the circle.