

**Rotations**

Rotations of  $90^\circ$  will result in a line perpendicular to the original, so the slope will be the negative reciprocal. To write the equation of a line after a  $90^\circ$  rotation, use the same procedure for translations and dilations, except use the negative reciprocal of the slope.

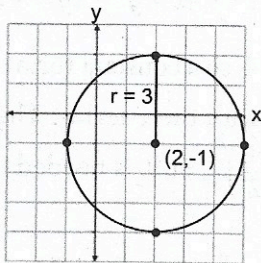
**EQUATION OF THE CIRCLE****Center Radius Form of the Equation of a Circle**

$(x - h)^2 + (y - k)^2 = r^2$  where the center has coordinates  $(h, k)$  and radius has length  $r$ .

- To graph a circle, first identify the center and radius from the equation. Plot a point at the center. Then plot points up, down, left, and right a distance  $r$  from the center.

**Example:**

Graph the equation  $(x - 2)^2 + (y + 1)^2 = 9$ .



The center is located at  $(2, -1)$ , and  $r^2 = 9$ , so  $r = 3$ . We plot the center point at  $(2, -1)$ ; then plot points up, down, right, and left 3 units from the center. Use these four points as a guide to complete the circle.