

Name: _____

Period: _____

6.4 The Power of a Point

1. Write the equation that represents all points (x, y) that are a distance of 5 units away from the origin.
2. Draw a quick sketch of the graph produced from question #1.
3. Write the equation that represents all points (x, y) that are a distance of 5 units away from the point $(1, 2)$.
4. Write the equation that represents all points (x, y) that are r units from the point (h, k) .
5. If you were to sketch the equation from above, describe what role (h, k) and r would serve in your diagram.

Determine the center and radius value of circles that possess the given equations.

8. $2x^2 + 2y^2 + 2x - 4y = -1$

9. $x^2 + y^2 - 4x + 12y = -30$

10. $36 - x^2 = y^2$

11. $x^2 + y^2 + 14x + 24y = -157$