GEOMETRY PRACTICE TEST NAME: _____

Distance Formula: $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ **General Form:** $ax^2 + by^2 + cx + dy + e = 0$

Equation of Circle: $(x - h)^2 + (y - k)^2 = r^2$ **Midpoint Formula:** $M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$

Slope: $m = \frac{y_2 - y_1}{x_2 - x_1}$ **Area:** $A = \pi r^2$

Slope-Intercept Form of a Line: $y = mx + b$ **Circumference:** $C = 2\pi r$

1. Is the point (10, 14) inside, outside, or on the circle $(x - 6)^2 + (y - 15)^2 = 16$?

2. Convert $(x + 4)^2 + (y - 2)^2 = 10$ from standard form to general form.

3. Convert $x^2 + y^2 - 26x - 2y + 166 = 0$ from general form to standard form.

4. Given two points on a line: (-2, 8) and (-6, -2).

   a. Find the slopes of a line parallel to this line.

   b. Find the slopes of a line perpendicular to this line.

5. Find the equation of a line that is parallel to $y = -2x + 8$ and goes through the point (5, -12).

6. Find the equation of a line that is perpendicular to $y = -3x - 8$ and goes through the point (12, 1).

7. Write the equation of a circle that has a center at (-5, 12) and has a circumference of 8π.

8. Write the equation of a circle that has a diameter with endpoints of (12 ,-1) and (-2, -5).

9. Given the equation $x = 11$ & passes through the point (3, -7)

   a. Write the equation of a parallel line.

   b. Write the equation of a perpendicular line.