

Name: _____

Date: _____

Instructions: Please complete the following problems. You may use another sheet of paper to draw your coordinate planes. You can find a fun crossword puzzle on the back for additional practice!

Problem 1. Consider the following points on the coordinate plane:

- Point A at coordinates $(1, 2)$
- Point B at coordinates $(4, 6)$
- Point C at coordinates $(-2, -3)$
- Point D at coordinates $(3, -1)$

Tasks:

1. Plot the points A , B , C , and D on a coordinate plane.
2. Find the distance between points A and B .
3. Find the distance between points C and D .

Problem 2. Find the midpoint between $F = (-2, 5)$ and $G = (4, -7)$.

Problem 3. Graph the equation $y = 3x + 2$, make sure to include all points from $x = -3$ to $x = 3$ and show your calculations of each point.

Problem 4. Find the x and y intercepts of $y = x^2 - 5x + 3$

Problem 5. Find the x and y intercepts of $y = \frac{6x + 12}{4 - 3x}$

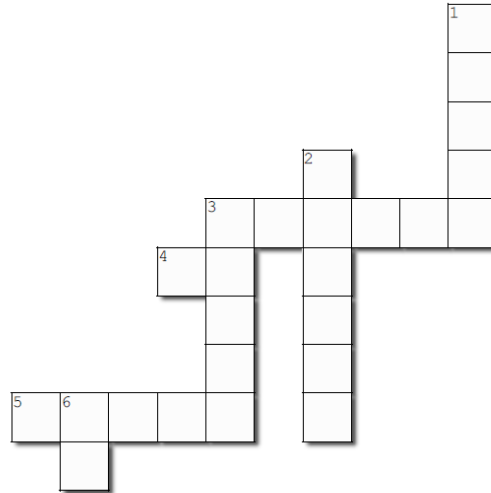
Problem 6. Test the symmetry with the x-axis, y-axis, and origin: $y = x^2 + x$

Problem 7. Given the center of a circle at the point $(h, k) = (2, -3)$ and a point that lies on the circle $(x_1, y_1) = (5, 1)$, find the standard form of the equation of the circle.

Problem 8. Find the center and radius of the circle: $x^2 + y^2 - 8x + 6y - 11 = 0$

Problem 9. True or False: If $(-2, 4)$ is a point on a graph that is symmetric with respect to the x-axis, then the point $(2, 4)$ is also on the graph.

Problem 10. Graph: $y = |x| + 1$

**Across**

3. Find the center of: $x^2 + y^2 + 4x - 6y + 1 = 0$
4. Find the distance between $(30,0)$ and $(0,40)$
5. Find the midpoint of $(1,4)$ and $(3,2)$.

Down

1. Find the x-intercept of: $2x + 3y = 12$. Write your answer as a coordinate point.
2. Find the center of: $(x - 2)^2 + (y + 5)^2 = 4$
3. Find the y-intercept of: $2x + 3y = 12$. Write your answer as a coordinate point.
6. Find the radius of: $(x + 4)^2 + (y - 6)^2 = 625$