

Name: _____

Date: _____

Period: _____

Mr. Valentino

Unit 10 Review Sheet

Test Topics!

- Slope
- Midpoint
- Distance
- Quadrilateral Proofs
- Triangle Proofs

Slope

SLOPE FORMULA:

- To decide if lines are parallel or perpendicular, first write the lines in _____ form, which is _____.
- Parallel lines have slopes that are _____.
- Perpendicular lines have slopes that are _____.

State whether the lines are parallel, perpendicular, or neither.

1. $y = 6x - 3$
 $y = -\frac{1}{6}x + 7$

2. $y = 3x + 2$
 $2y = 6x - 6$

3. $3x + 2y = 5$
 $3y + 2x = -3$

4. What is the slope of the line passing through the points $(-5, 6)$ and $(4, -3)$?

5. What is the slope of the line parallel to the line in question 4? _____

6. What is the slope of the line perpendicular to the line in question 4? _____

7. A line u passes through $(6, 1)$ and $(8, p)$. A line v passes through $(2, -3)$ and $(10, -6)$. The lines u and v are parallel. Find the value of p .

8. What is the equation of the line passing through the points $A(4, -5)$ and $B(-2, -2)$?

Midpoint

MIDPOINT FORMULA:

1. What is the midpoint of line segment AB with A(11, -5) and B(1, -10)?
2. What is the midpoint of line segment AB with A(14, 18) and B(-6, 10)?
3. What is the endpoint of line segment AB given A(4, 6) and midpoint M(-3, -2)?
4. What is the equation of the perpendicular bisector of line segment AB with endpoints A(-4, -2) and B(8, 4)?
5. What is the equation of the perpendicular bisector of line segment AB with endpoints A(-9, 11) and B(-15, 19)?

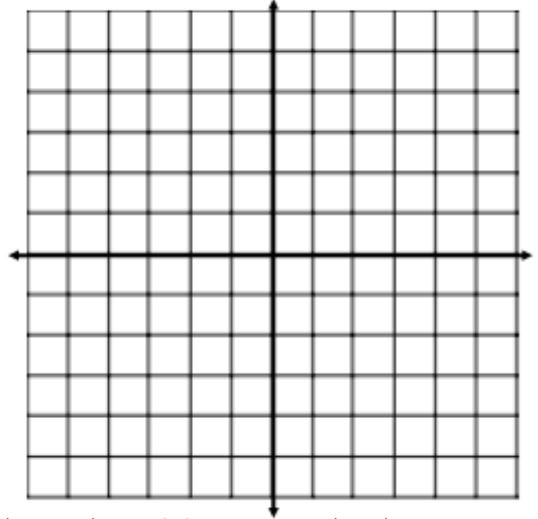
Distance

DISTANCE FORMULA:

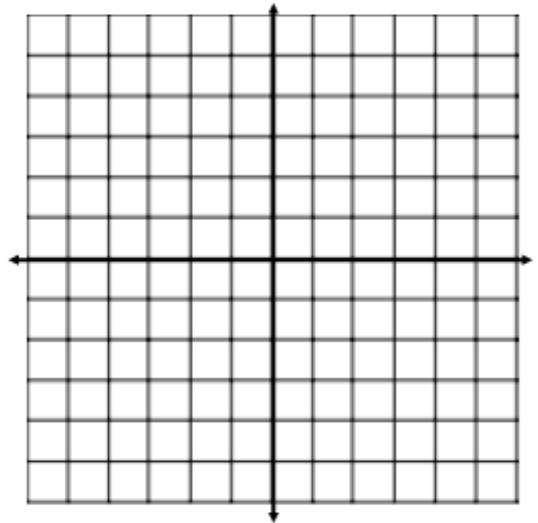
1. Where does the distance formula originate from? _____
2. What is the length of the line segment connecting A(5, 9) and B(-7, -7)?
3. What is the length of the line segment connecting A(3, 8) and B(9, 10)?
4. The point (-3,-6) lies on a circle. What is the length of the radius of this circle if the center is located at (9,-2)?
5. The point (10,-5) lies on a circle. What is the length of the diameter of this circle if the center is located at (6,4)?

Quadrilateral Proofs

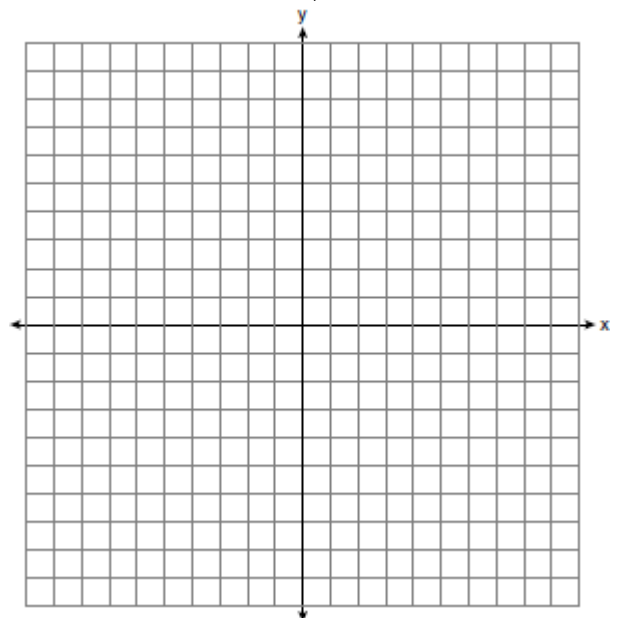
1. Prove that the quadrilateral with the coordinates $L(-2,3)$, $M(4,3)$, $N(2,-2)$ and $O(-4,-2)$ is a parallelogram.



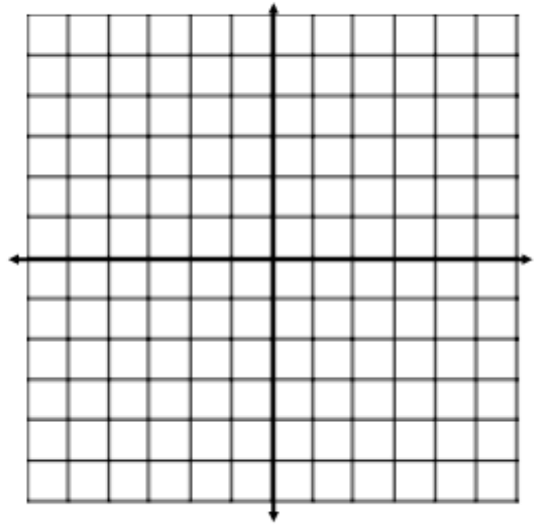
2. Given the points $R(-1, 0)$, $C(-3, -4)$ and $K(0, -1)$, find the point O that makes $ROCK$ a rectangle. Then prove it is a rectangle.



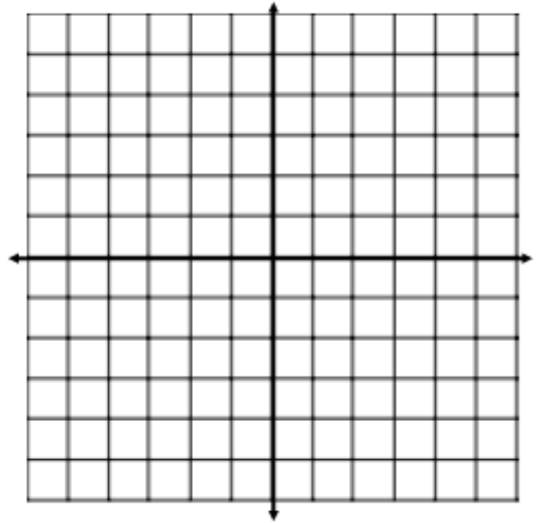
3. Given Rhombus $GHJK$ with $G(-5, 5)$, $H(0, 3)$ and $K(-7, 0)$. Find the coordinates of J . Then prove $GHJK$ is a rhombus.



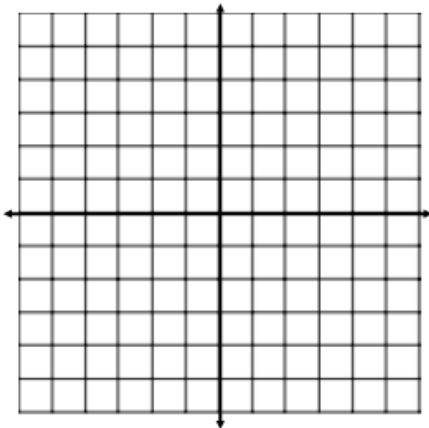
4. Prove that the quadrilateral with vertices A(-1,0), B(3,3), C(6,-1) and D(2,-4) is a square.



5. Prove that quadrilateral MILK with the vertices M(1,3), I(-1,1), L(-1, -2), and K(4,3) is an isosceles trapezoid.



6. In parallelogram MATH, the coordinates of the endpoints of the diagonal MT are M (1, 3) and T (5, 1). Which of the following equations contains diagonal AH and would prove MATH is a rhombus?



1) $y = -\frac{1}{2}x + 2$

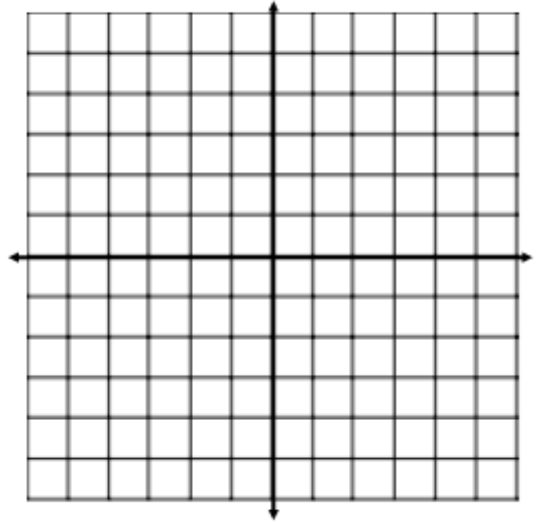
3) $y = -\frac{1}{2}x + 6$

2) $y = 2x - 4$

4) $y = 2x + 3.5$

Triangle Proofs

7. Prove that $A(0, 1)$, $B(3, 4)$, $C(5, 2)$ is a right triangle.



8. Prove that $A(-2, -2)$, $B(5, -1)$, $C(1, 2)$ is an isosceles triangle.

