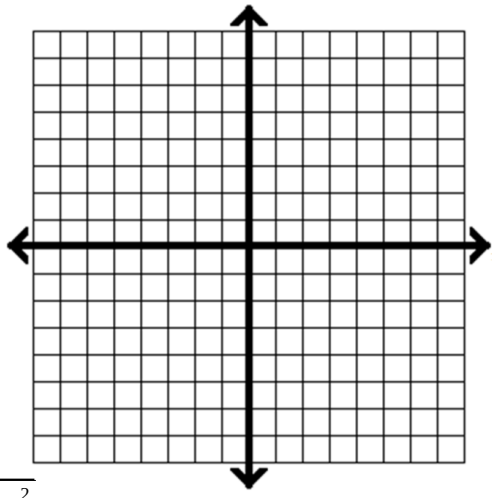
Geometry Name: _____

Coordinate Geometry Review Period: _____



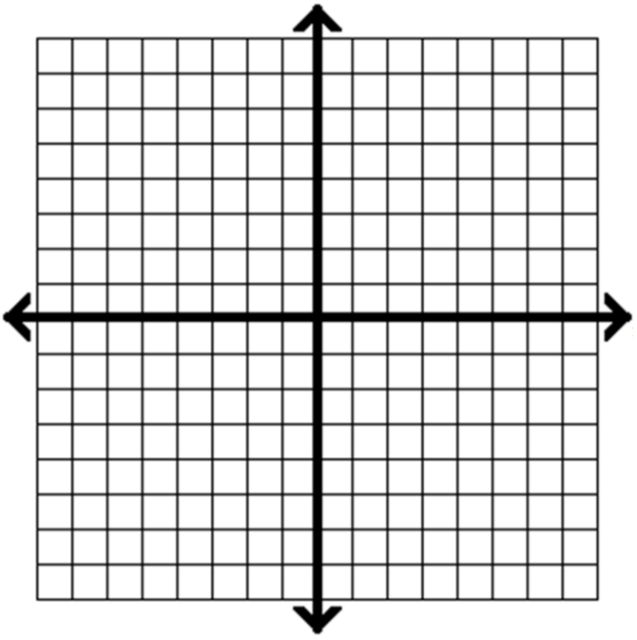
1.) Given the points $A(-2,4)$ and $B(7,-2)$:

a.) Find the slope of the line passing through points A and B. *$m = \frac{y_2-y_1}{x_2-x_1}$

b.) Find the midpoint of $\overline{AB}$. *Midpoint: $\left(\frac{x_2+x_1}{2}, \frac{y_2+y_1}{2}\right)$

c.) Find the distance between points A and B. *Distance: $D = \sqrt{Run^2 + Rise^2}$

2.) You are given quadrilateral GEOM with vertices at $G(-3,4)$ $E(5,6)$ $O(4,-2)$ $M(-4,-4)$.



a.) Plot the 4 points and find the slope of all 4 sides.

b.) Find the lengths of all 4 sides (using the Distance Formula). Round your answers to the nearest tenth of a unit.

c.) What conclusions can you draw about quadrilateral GEOM based on your answers from (a) and (b)?

3.) You are given **line *m*** with a slope of $2\frac{1}{4}$.

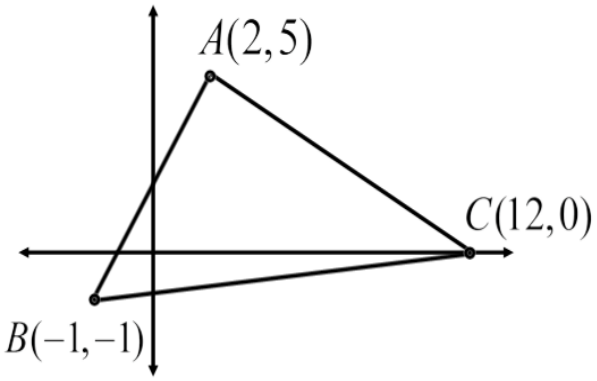
a.) What is the **slope** of a line **parallel** to **line *m*** written as an improper fraction? _____

b.) What is the **slope** of a line **perpendicular** to **line *m*** written as an improper fraction? _____

Use the diagram below for problems (4)-(8)

4.) Find the length of all 3 segments of $\triangle ABC$. Round to the nearest tenth of a unit.

5.) Find the slopes of all 3 sides of $\triangle ABC$.



6.) Using your information from questions (3) and (5), is $\triangle ABC$ a right triangle? Briefly explain your answer.

*7.) **Challenge Question.** A median is a segment drawn from one vertex of a triangle to the midpoint of the opposite side. Every triangle has 3 medians, one starting from each vertex. Find the slope of the **median** of $\triangle ABC$ to $\overline{BC}$ written as a reduced fraction.

*8.) **Challenge Question.** An altitude is a segment drawn from one vertex of a triangle perpendicular to the opposite side. Every triangle has 3 altitudes, one starting from each vertex. Find the slope of the **altitude** of $\triangle ABC$ to $\overline{BC}$.

*9.) **Challenge Question.** Find the point where the altitude from problem (8) intersects $\overline{BC}$.