

Name: _____

Period: _____

Geometry

Classwork: Parallel + Perpendicular Lines

Warm Up:

#1 Match the following definitions and terms:

1. Median
2. Altitude
3. Centroid
4. Orthocenter
5. Circumcenter
6. Incenter
7. Midsegment
8. Perpendicular Bisector
9. Angle Bisector

- a) a line segment from a triangle's vertex to the midpoint of the opposite side
- b) the point of concurrency of 3 altitudes
- c) the point of concurrency of 3 angle bisectors
- d) the point of concurrency of 3 perpendicular bisectors
- e) the point of concurrency of a Δ 's 3 medians
- f) A line segment that goes from a Δ 's vertex to the opposite side, forming a right angle

#2: G is the centroid of ΔABC ,
and $\overline{DG} = 7$, $\overline{CF} = 30$ and
 $\overline{AG} = 18$. Find:

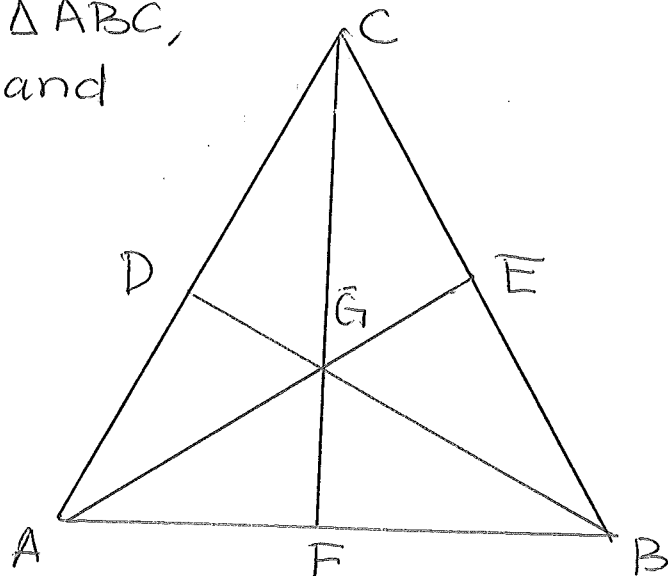
~~_____~~ \overline{GB} _____

$\overline{GF} =$ _____

$\overline{GE} =$ _____

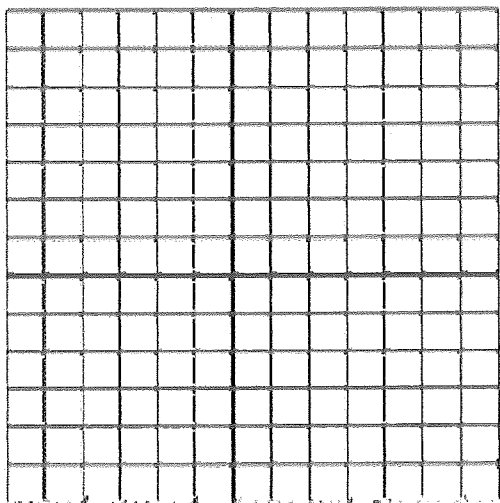
$\overline{AE} =$ _____

$\overline{CG} =$ _____



Geometry Classwork 3H: I can write equation for parallel and perpendicular lines.

1. Write an equation for the two lines shown below.



2. What type of lines are these?

3. What do you notice about the equations of these lines?

Parallel Lines:

1. Which two lines are parallel, why?

- a. $y = 6x + 3$
- b. $y = -6x - 2$
- c. $y = 1/6x + 10$
- d. $y = 6x - 4$

2. What would the slope be of a line that is parallel to $y = 4x - 2$?

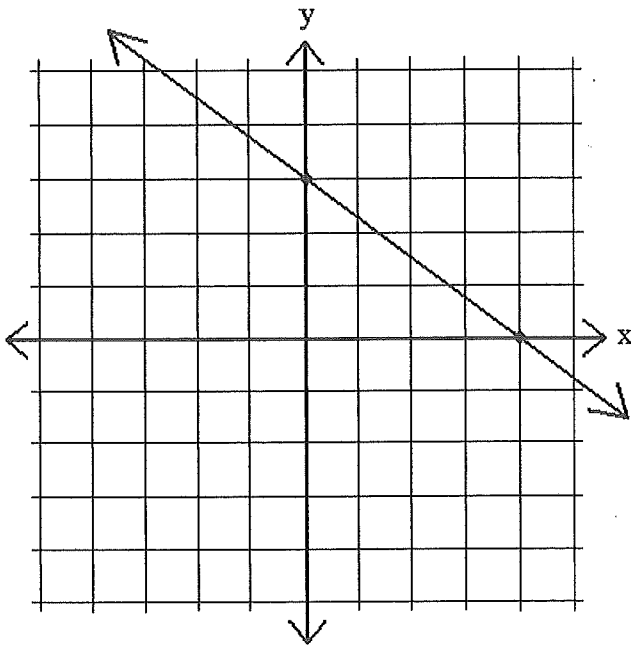
3. What would the slope be of a line parallel to $y = 1/2 x - 3$?

- a. 2
- b. $-1/2$
- c. 0.5
- d. -2

Problem #1: Write an equation that is parallel to the line $y = \frac{1}{2}x - 12$ that passes through the point $(-2, 4)$.

Problem #2: Write an equation for a line that is parallel to $y = -\frac{2}{3}x + 5$ that passes through the point $(12, 11)$.

Problem #3: An electrical line lies underground as shown on the graph below. A water pipe needs to be built parallel to the electrical line. The water pipe line will start at point P $(-4, 2)$. Write an equation for the water pipe.



Perpendicular Lines:

Problem #1: What would the slope be of a line perpendicular to $y = 3x + 5$?

Problem #2: What would the slope be of a line perpendicular to $y = -1/2x + 3$?

Problem #3: What would the slope be of a line perpendicular to $y = 3/5x + 2$?

Problem #4: What would the slope be of a line perpendicular to $y = 6x - 2$?

Problem #5: Which equation below is perpendicular to $y = 8x + 10$?

- a. $y = 8x + 20$
- b. $y = 1/8x + 10$
- c. $y = -8x + 100$
- d. $y = -0.125x + 50$

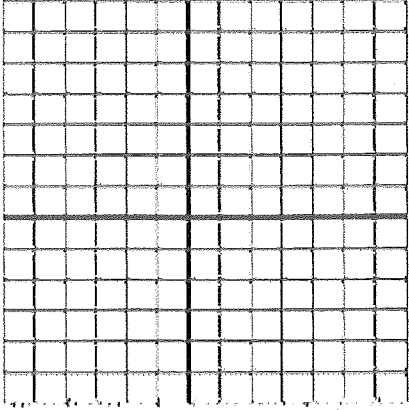
Problem #6: Write an equation perpendicular to $y = 6x + 3$ that passes through the point $(-6, -2)$.

Problem #7: Write an equation perpendicular to $y = 3/4x + 3$ that passes through the point $(6, 1)$.

Problem #8: Write an equation perpendicular to $y = -4/7x + 13$ that passes through the point $(4, -2)$.

Problem #9: Write an equation perpendicular to $y = 1/5x + 3$ that passes through the point $(-2, -1)$.

Problem #10: Along 26th Street there are two houses. One house is located at Point Q (-4, -6) and at Point P (2, 6). A new house is being built off of 26th street at Point H (-2, 1). The owners want to build a driveway perpendicular to 26th street. What will the slope of the driveway be? What will the equation of the new driveway be?



Problem #11: 8th Street begins at point (-5, 6) and continues on until (4, -6). 8th Avenue is perpendicular to 8th Street and begins at (4, 4). Write an equation to represent the path of 8th Avenue.

