**Distance and Midpoint Homework #1**

**Directions:** Use the Pythagorean Theorem or Distance Formula to find the distance of each segment, and then find the midpoint of each segment. ***You must simplify radicals and fractions – no decimals!!!!***

1. G(2,6), H(-1,4) Distance: \_\_\_\_\_\_\_\_\_\_



 Midpoint:\_\_\_\_\_\_\_\_\_\_\_

 Slope: \_\_\_\_\_\_\_\_\_\_\_\_\_

2. J(7,10), K(-4,5) Distance: \_\_\_\_\_\_\_\_\_\_



 Midpoint:\_\_\_\_\_\_\_\_\_\_\_

 Slope: \_\_\_\_\_\_\_\_\_\_\_\_\_

3. D(0,2), E(4,5) Distance: \_\_\_\_\_\_\_\_\_\_



 Midpoint:\_\_\_\_\_\_\_\_\_\_\_

 Slope: \_\_\_\_\_\_\_\_\_\_\_\_\_

**Directions:** M is the midpoint of $\overbar{XY}$. Find the missing endpoint’s coordinates based on the given information.

4. M(2,3), X(-1,5) Find Y(x,y)

5. M(3,1), Y(-4,7) Find X(x,y).



Use figure to the left for 6-8.

**In this figure,**$\overbar{GE}$ **bisects** $\overbar{BC}$ **and** $\overbar{GF}$ **bisects** $\overbar{AB}$**.** $\overbar{FG}⊥\overbar{GE}.$

6. Find the coordinates of F, E and G. F: \_\_\_\_\_\_

 E: \_\_\_\_\_\_\_

G: \_\_\_\_\_\_\_

7. Find the following lengths by calculating the distance between each endpoint.

 AB=\_\_\_\_\_\_\_\_\_\_\_ BE=\_\_\_\_\_\_\_\_\_\_\_

 BC=\_\_\_\_\_\_\_\_\_\_\_ BF=\_\_\_\_\_\_\_\_\_\_\_

 CD=\_\_\_\_\_\_\_\_\_\_\_ BG=\_\_\_\_\_\_\_\_\_\_\_

 BD=\_\_\_\_\_\_\_\_\_\_\_ DG=\_\_\_\_\_\_\_\_\_\_\_

8. Name conclusions or relationships that you can conclude based on the information you found in #6 and 7. It must be based on what YOU found, NOT what was given to you.