Name: _____

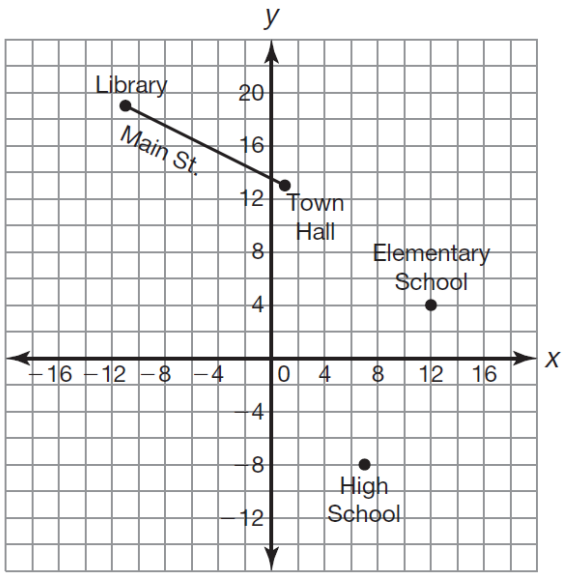
1.5.D1 – THE COORDINATE PLANE

Past due on: _____ Period: _____

ALL WORK MUST BE SHOWN TO RECEIVE CREDIT.

1. Find the length, midpoint, and slope of the line segment with endpoints $A(5, -8)$ & $B(-2, 9)$. Simplify any square roots and fractions.

Use the map of Gilberta to answer each question.
One mile is equal to 6 units on the map.



2. After school today, Mica must walk from the high school to the elementary school to pick up his younger brother, Rico.
   a. Determine the distance between the high school and the elementary school. If necessary, round to the nearest tenth.

   b. How many miles must Mica walk to pick up his younger brother?

3. Mica and Rico must then walk home. Their home is located half-way between the Town Hall and the Library on Main Street.
   a. What are the coordinates of their home?
   b. Determine the distance between the elementary school and their home. If necessary, round to the nearest tenth.

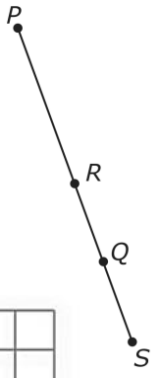
   c. How many miles, from the elementary school, is their home?

4. Center Street runs parallel (same slope) to Main Street. What is the slope of Center Street?

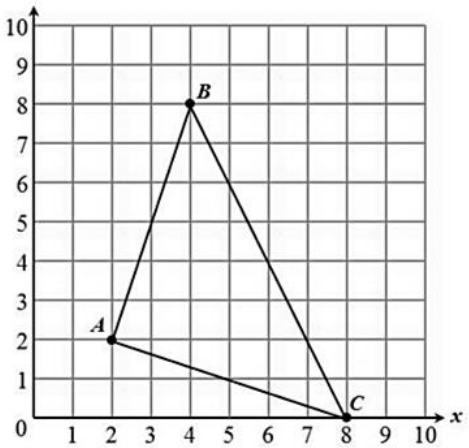
5. Center Street passes by Gilberta Park, located at $(-12, 8)$. Mica usually meets his girlfriend, Sasha, there because it's the halfway point between their homes. Tonight, however, he's having dinner at Sasha's so that he can meet her parents. What are the coordinates of Sasha's home? *Refer to 3a for Mica's coordinates.*

6. If a line segment has endpoints $A(3x + 5, 3y)$ & $B(x - 1, -y)$, what are the coordinates of the midpoint of $\overline{AB}$?

7. R is the midpoint of $\overline{PS}$; Q is the midpoint of $\overline{RS}$. P is located at $(8, 10)$ and S is located at $(12, -6)$. What are the coordinates of Q?



8. Refer to the graph of $\triangle ABC$.



   a. What are the midpoints of $\overline{AB}$ & $\overline{BC}$?

   b. What is the length of $\overline{AC}$?

   c. What is the slope of $\overline{AC}$?

   d. Darlene claims that the segment connecting the midpoints of $\overline{AB}$ & $\overline{BC}$ is parallel to $\overline{AC}$ and is half the left of $\overline{AC}$. Is Darlene correct? Explain your reasoning.

9. Line segment $\overline{AZ}$ has a length of $\sqrt{104}$ units; $A(8, 7)$ & $Z(x, 9)$. Find the missing coordinate x.

10. Line segment $\overline{WI}$ has a length of $\sqrt{98}$ units; $W(-2, -8)$ & $I(-9, y)$. Find the missing coordinate y.