**Down The Rabbit Hole**

Okay. So now you know how to find the midpoint of a segment, but can you find the midpoint of the MIDPOINT of a segment? Yes you can. Here’s the story: A is the midpoint of segment $\overbar{BN}$.

B is at point (-10, 10) and N is at point (8, -8).

**Use the graph on the back for each of these problems!**

1. Draw segment$\overbar{ BN}$. Find the coordinates of point A. Label it on the graph.
2. R is the midpoint of $\overbar{ BA}$. How could you find the coordinates of that point? Write your strategy in the space below.
3. Find the coordinates of R ( , ) and label it on the graph.
4. What fraction of $\overbar{ BN}$ is $\overbar{ BR}?$ \_\_\_\_\_\_\_ How do you know?
5. I is the midpoint of $\overbar{ AN}$. Find the coordinates of I ( \_ , )and label it on the graph.
6. What fraction of $\overbar{ BN}$ is $\overbar{ BI}?$ \_\_\_\_\_\_\_ How do you know?
7. H is the midpoint of $\overbar{ BR}$. Find the coordinates of H ( \_ , )and label it on the graph.
8. What fraction of $\overbar{ BN}$ is $\overbar{ BH}?$ \_\_\_\_\_\_\_ How do you know?
9. SUPER COOL AWESOME BONUS: A1 is the midpoint of $\overbar{ BH}$. Find A1 ( , ) and label it on the graph. What fraction of $\overbar{ BN}$ is $\overbar{ BA\_{1}}?$ \_\_\_\_\_\_\_ How do you know?
10. SUPER COOL AWESOME BONUS 2: What does your segment spell? What is that?
11. SUPER COOL AWESOME BONUS 3: What fraction of $\overbar{ BN}$ is $\overbar{ A\_{1}I}$? Convince me.

