Name: _____

Mapping and Graphing with Decimals

Let's plan a trip! Pick someplace you would like to travel to and then map out a route you would take to get there with stops along the way. You will be measuring the distance between each of the stops to find out how many miles you will be traveling.

Steps:

- Sign up for ArcGis (an online mapping tool). Information is on Google Classroom (code: tt41y7d) or you can go to <u>https://www.arcgis.com/home/signin.html</u> and Create a Public Account.
- 2. Click on Map
- 3. Zoom in on an area in the world that you would like to explore. You will be measuring the distances to places nearby that you would like to travel to. Or start at Allendale and plan a trip to someplace within the U.S. You must have at least 8 different cities/stops on your route.
- 4. Click the Measure tool at the top of the page and select the distance icon (2nd one from the left). Pick a starting spot and measure a distance to a nearby town and measure a route around that spot like shown below. Change the units to miles.
- 5. This mapping tool will provide the total distance around your route. You need to determine the individual distances between each point/city. What could you do to solve for each individual distance?
- 6. Record the total distance between each city and then calculate the individual distances.

Starting point to destination (Ex. Allendale to Chicago)	Total distance from starting point (miles)	Distance from previous stop (miles)	Estimated distance (Round to nearest whole number)
Allendale to Chicago	124.8 miles	124.8 miles	125 miles
Chicago to Aurora	198.9 miles	198.9-124.8= 74.1 miles	74 miles

1. <u>Draw and label a diagram/map to show your route</u>. You will <u>need to label the distances between each place</u>. Example:



2. If you run into a detour on your trip and have to go an extra 19.8 miles, what will be your new total distance?

3. If you find a shortcut that cuts off 13.29 miles, what will be your new total distance?

4. Write and solve an addition word problem using your map.

5. Write and solve a subtraction word problem using your map.

Now you will be collecting data about the area you are planning to take a trip around and will be making a bar graph. Follow the steps below:

- 1. At ArcGis, click "Add" and then "Search for layers".
- 2. In the Find box, type in "Population".
- 3. Choose the "Median Age" layer, click on it, and then click "Add to Map"
- 4. Click "Done Adding Layers"
- 5. Click "Legend" to see what each color represents.
- 6. Record your data in the chart below.

City	Median/Average Age
Chicago area	21 years

Construct a bar graph to represent the ages of the people in the cities you will be visiting on your trip. Don't forget a title, an equal interval scale, and labels for your axes.