Name: _____   **<u>Polaris Lab</u>**

Introduction: Polaris is the North Star. To find polaris in the night sky you first must find the big dipper. Once you find the big dipper, use the two pointer stars to point the way to Polaris. Use the distance between the pointer stars and measure 5X that distance to get to the big dipper.

Procedures:

1. Using the 7 stations set up in the commons, the north star (located 25 feet up the wall) and your astrolabe, you will calculate the altitude of the north star as was demonstrated in class. Measure the angle of elevation to the nearest degree. The teacher will assign you and a partner to a station. When you finish you will go to the next highest letter station until you go to all stations. Once you go to all stations you will finish the next step.

2. Determine the relationship between the altitude of the north star and your latitude. Now using your measurements determine the latitude of the 7 stations.   Answer the questions in the results section.

3. Plot the altitude of Polaris vs the latitude showing all seven points on the graph. Circle the points and connect them with a solid line. Now with a dotted line extrapolate your graph to the highest and lowest altitude of Polaris.

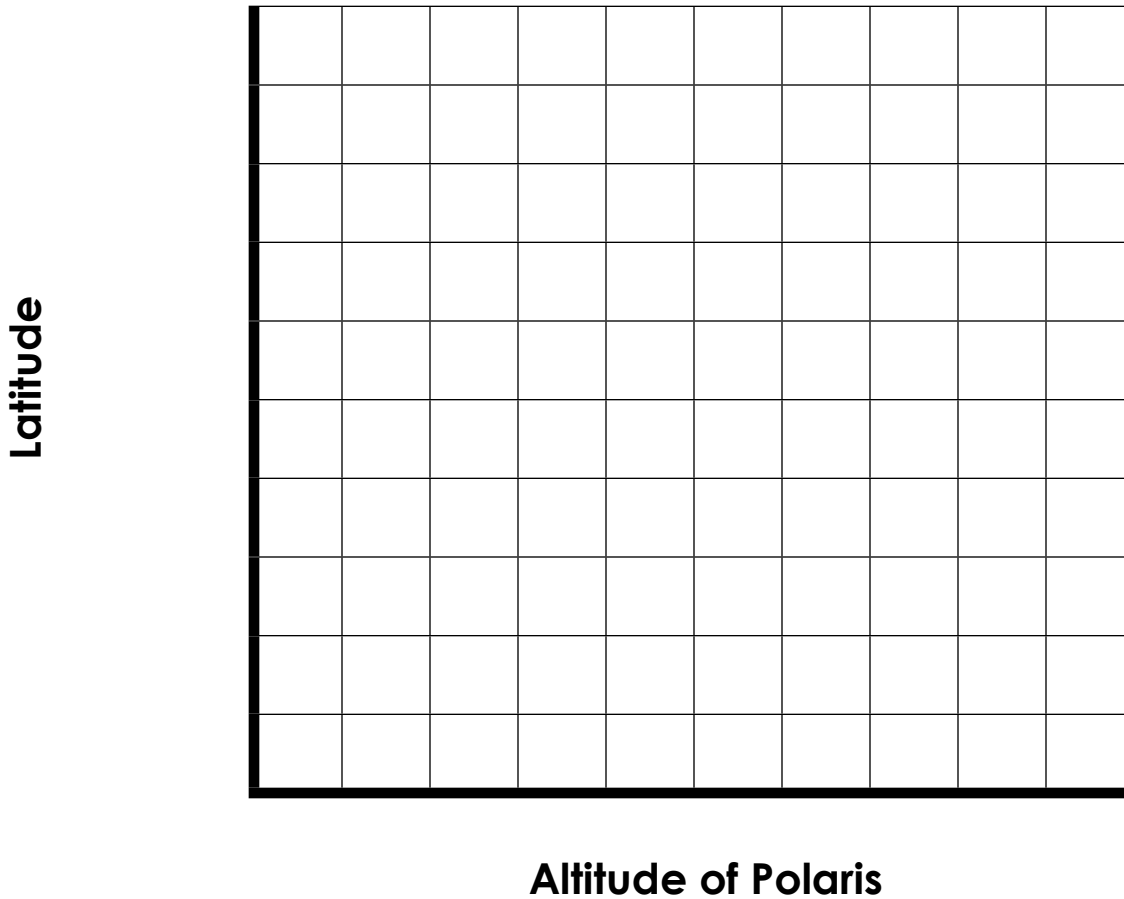|	**A**	**B**	**C**	**D**	**E**	**F**	**G**
Altitude of Polaris							
Your Latitude							

Answer the following...

1. What is the highest possible altitude of Polaris? _____ What is the highest possible latitude on earth? _____ Where is this found on earth? _____

2. What is the lowest possible altitude of Polaris? _____ What is the lowest possible latitude on earth? _____ Where is this found on earth? _____

3. At the Tropic of Cancer what is the altitude of Polaris? _____ What is the latitude of the Tropic of Cancer? _____

4. What is the highest and lowest latitude of New York State? _____ and _____.   What is the highest altitude that Polaris can be in NYS? _____ What is the lowest altitude that Polaris could be in NYS *(in degrees and minutes)*? _____

Complete the table below. Plot Altitude of Polaris vs Latitude. Plot points on Graph and connect them with a solid line then extrapolate to the maximum and minimum Altitude of Polaris with a dotted line,

Latitude

Altitude of Polaris

Conclusion Questions:

1. Name A city in NYS where Polaris has an altitude of 41° _____

2. Name A city in NYS where Polaris has an altitude of 44° _____

3. Name A city in NYS where Polaris has an altitude of 45° _____

4. Tell how to use a astrolabe to find the altitude of Polaris

_____

_____

5. How is the attitude of Polaris related to your latitude?

_____

_____