Name

LAB Geology

Epicenter Location

Procedure:

1. Convert the arrival time of P waves to seconds. Record this time in the data sheet.
2. Since P waves move at 6 kilometers per second, multiply the number of seconds by 6. Record this as the distance from the epicenter using P wave arrival time.
3. S waves move at half the speed of P waves and, therefore, take twice as long to get to each station. Double the arrival times (in seconds) and record in the appropriate space.
4. ~~Convert the arrival time of the S wave to mixed units by dividing by 60. The remainder from the long division is the number of seconds.~~
5. To plot the earthquake epicenter on the map of the Lost Continent, the scale distance for the map must be calculated. Copy the "Distance from the Epicenter Using P-wave Time" from your own figures in the "Earthquake Event Data" chart to the "Distances to be Plotted on the Map" chart.
6. Divide the distance by ~~250 km per inch~~ (100 km per cm) in order to find out what measurement on the map represents scale distance to the epicenter.
7. Set a drawing compass to the scale measurement and draw as much of a circle around each station as is possible given the size of the paper.
8. The point that all circles come together is the epicenter.

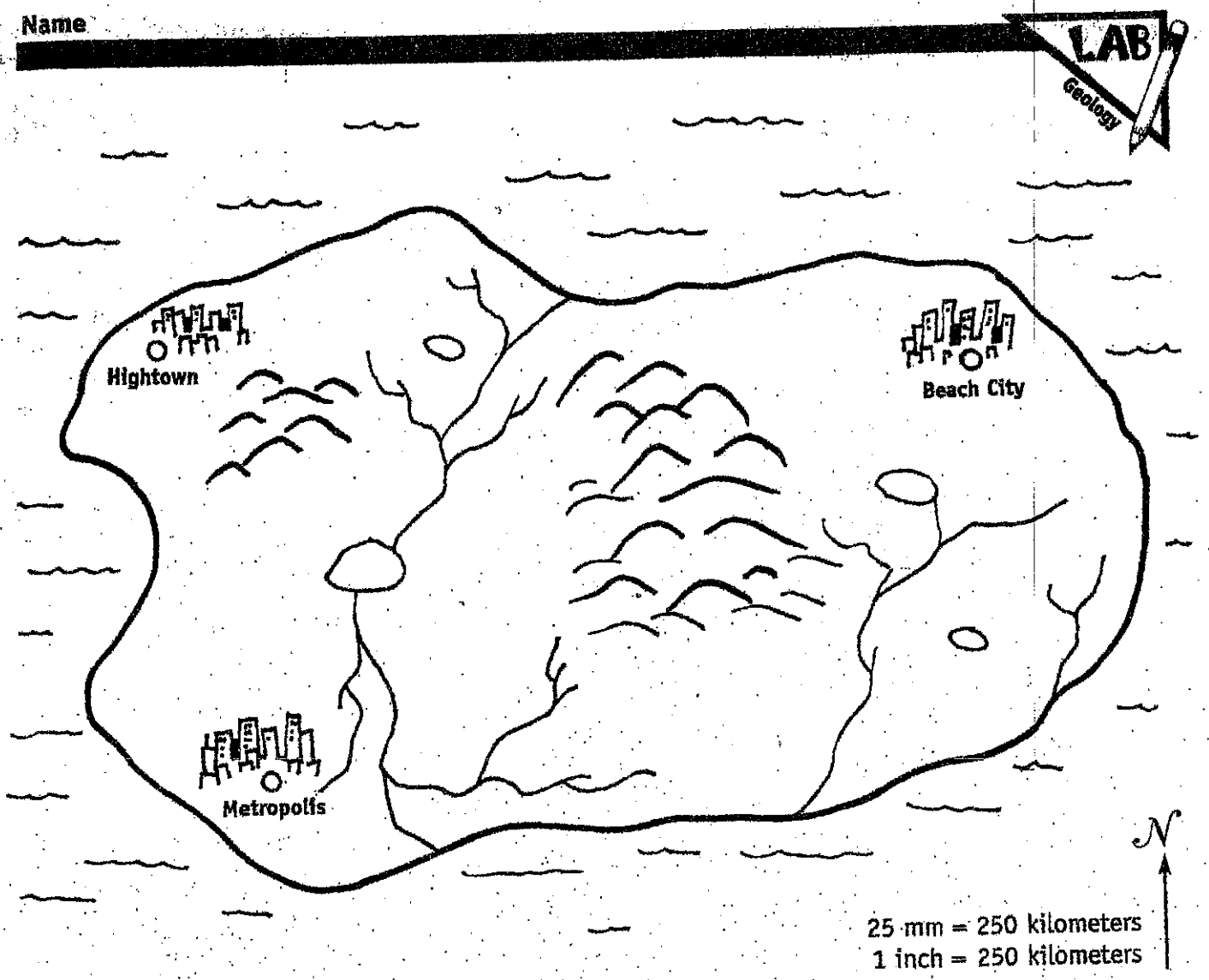
Earthquake Event Data

Seismic Station	P-wave Arrival Time (mixed units)	P-wave Arrival Time (seconds)	Distance from Epicenter Using P-wave Time	S-wave Arrival Time (seconds)	S-wave Arrival Time (mixed units)
Hightown	2 min., 29 sec.				
Beach City	1 min., 24 sec.				
Metropolis	2 min., 47 sec.				

Distances to be Plotted on the Map

Seismic Station	Distance from Epicenter Using P-wave Time	Distance Represented to Map Scale
Hightown		
Beach City		
Metropolis		

Name



Questions:

1. Describe where the epicenter is in terms of the shape of the Lost Continent.

2. How many seismic stations are necessary to plot the location of an epicenter?

3. What is the problem in trying to locate an epicenter with only two seismic stations?