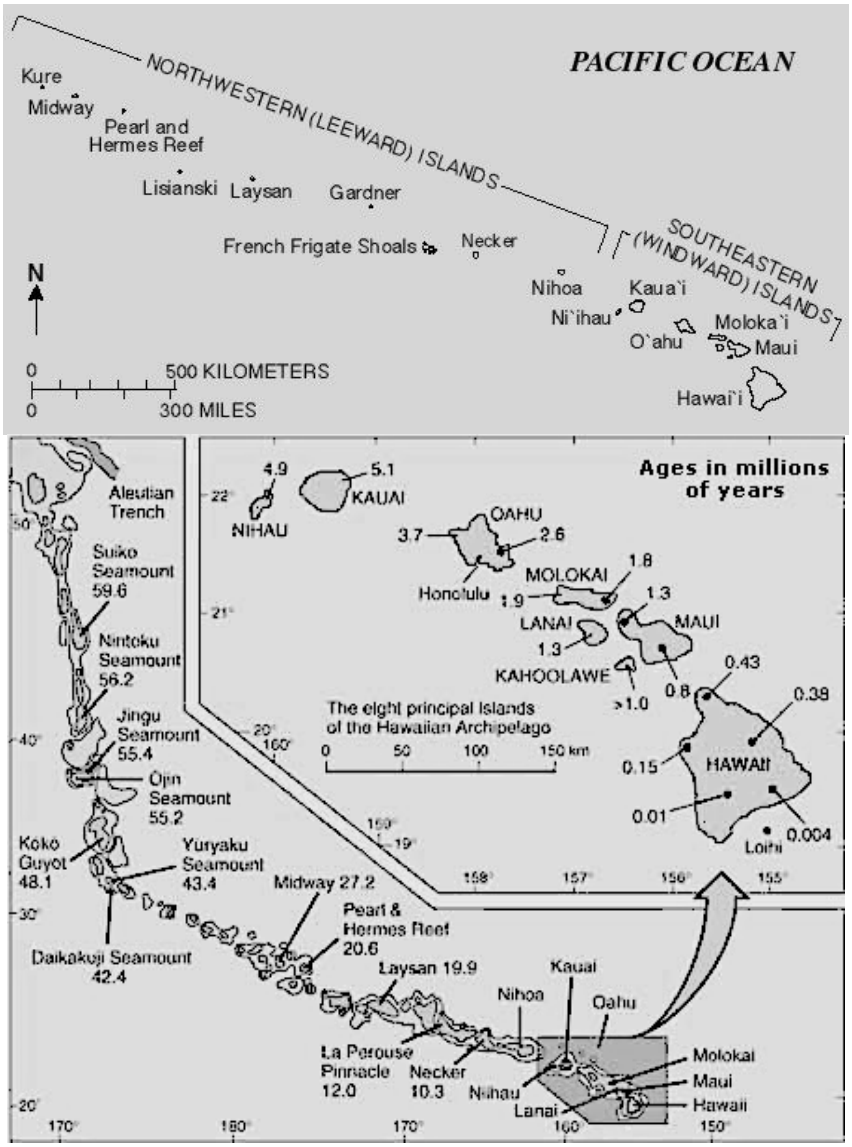
Hot Spot and the Hawaiian Islands

Instructions: Plot the data from the table below.

THE HAWAIIAN ISLANDS AND SEAMONTS

Island, Reef, Seamount, Atoll or Guyot	Approximate Age (in millions of years)	Longitude (in degrees and minutes)
Hawaii	0.0	155° 30' W
Koko	48.1	172° 0' E
Kauai	5.1	158° 30' W
Maui	.8	156° 30' W
Midway	27.2	177° 30' W
Molokai	1.8	157° 0' W
Necker	10.3	164° 30' W
Nihoa	No Data	162° 0' W
Oahu	3.1	158° 0' W
Pearl	20.1	176° 0' W
Yuryaku	43.4	172° 15' E



Age In Millions Of Years

10 20 30 40 50

East 168 170 172 174 176 178 180 178 176 174 172 170 168 166 164 162 160 158 156 West

International Date Line at 180°

Longitude In Degrees

Age In Millions Of Years

10 20 30 40 50

Answer the following questions <u>after</u> you plot the islands, seamounts, guyots or atolls.

1. Draw a line of best fit for your data points.

2. Which island is the youngest?

3. Which island is the oldest?

4. As you move LEFT on your graph paper, what happens to the age of the islands?

   What is the relationship between the age of the islands and distance the islands are from Hawaii?

5. Koko Guyot seems to be a little out of place. Why is that?

6. If an island had formed 30 million years ago, what would its longitude approximately be? Plot it on the graph and put a square around it.

7. If an island is to form 4 million years in the future, where would it be located in relationship to Hawaii? Plot it on the graph and put a triangle around it.

8. If there was an island at 170° West, what would its age approximately be? Plot it on the graph and put a star around it.

9. Approximately what is the age of Nihoa? Plot it on graph and circle it.

10. Looking at the islands that you plotted on your graph, which direction is the Pacific Plate moving?

11. Explain how the Hawaiian Islands were formed based on what you know about hotspots. Use full sentences.

12. The islands and seamounts older than the Yuryaka Seamount changes directions. Explain what must of occurred with the Pacific Plate.