Name _____ Period _____

Calculating the Age of Islands and Seamounts in Samoa

Your Assignment

Use the following information AND the Pacific Plate velocity sheet from yesterday to determine the age of the Samoan seamounts and islands in millions of years.

Samoan Seamount Distances

Seamount Number	Seamount Name	Distance From Vailulu'u (km)	Distance From Vailulu'u (cm)	Seamount Age (Myr)
1	Vailulu'u	0		
2	Ta'u	20		
3	Malu Malu	78		
4	Muli	114		
5	Ofu	89		
6	Tulaga	115		
7	Soso	136		
8	Tama'i	168		
9	Tutuila	153		
10	Tisa	247		
11	Savai'I Island	416		
12	Pasco	632		
13	Combe	906		
14	Wallis Island	815		

Instructions

1. Determine your group's average Pacific Plate velocity (using the Hawaiian data set).

$$PLATE\ VELOCITY \quad = \quad \_\_\_\_\_ \quad cm / yr$$

2. Now take the reciprocal of that number.

$$RECIPROCAL \quad = \quad \_\_\_\_\_ \quad yr / cm$$

Name _____ Period _____

3. Convert distance of each seamount to Vailulu'u from km to cm and fill in the table.

4. Determine age for EACH seamount using information from steps 1 and 2.

$$\_\_\_\_\_ \quad \frac{yr}{cm} \quad x \quad \_\_\_\_\_ \quad cm \quad = \quad \_\_\_\_\_ \quad SEAMOUNT\ AGE\ (yr)$$

5. Convert age in YEARS to age in MILLIONS YEARS and fill in the table.

$$\_\_\_\_\_ \quad yr \quad x \quad \frac{1\ million\ yr}{1,000,000\ yr} \quad = \quad \_\_\_\_\_ \quad SEAMOUNT\ AGE\ (Myr)$$

Determine the age of EACH seamount you have been assigned!
Then, write your responses on the board!