12.710 Marine Geology and Geophysics
Homework 4
Plate Motions

1. Table 1-5 in *Geodynamics* by Turcotte and Schubert may be useful in answering the following questions.
   (a) What is the spreading rate between the North American and Eurasian plates in Iceland (65° N, 20°W)?
   (b) What is the relative plate velocity between the Indian and Eurasian plates in the Himalayas (30° N, 81°E)?

2. *(a)* If the area of the oceanic crust is 3.2×10^8 km^2 and new seafloor is being created at a globally averaged rate of 2.8 km^2 yr^{-1}, what is the mean age of oceanic crust? *(b)* What assumption needs to be made to do this problem? In practice is it a valid assumption?