

Homework #2 Part B (5-20) to be submitted with Part A (1-4). Study the map of plate velocities (Last few pages of our text book. Understanding Earth).

5. Which plate converges fastest with the Pacific plate? The *angle* of collision matters! a. Eurasian
b. Australian c. Nazca d. Antarctic e. Cocos
6. Between which two plates can be found the fastest ocean floor accretion?
a. S. America/Africa b. Australia/Antactic c. Pacific/Antactic d. Pacific/Nazca
7. Between which two plates can be found the fastest transform fault?
a. S. America/Africa b. Australia/Antactic c. Pacific/Antactic d. Antarctic/Nazca
8. Looking at your map estimate the distance change each year between Tokyo and Santiago? a.
hardly any relative motion b increasing 30 mm/yr c. decreasing at 30 mm/yr.
9. Your map depicts Himalayan convergence rather misleadingly since the number shown indicates
Indo/Asian convergence. If the mountains of Tibet, Tien Shan and Mongolia are each contracting
north/south at 11 mm/yr, what is the true convergence rate? a. 11 mm/yr b. 16 mm/yr c. 21 mm/yr
d. 31 mm/yr e 41 mm/yr.
10. If a fault slips 21 m in a Himalayan earthquake with **M** 8.5, what is the minimum interval between
M 8.5 earthquakes in the Himalaya?
a. 10 years b 100 years c 1000 years d 2000 years e 3100 years
11. How much further from London will Boulder be in the year 2108?
a. 1 m b 2 m c 20 m d 200 m e 2 km
12. Using the velocity shown on your map, and assuming the distance between Berkeley and Caltech,
is 425 miles, in how many years will the campuses of each University be within 10 miles of each
other?
a. 13.6 million years b. 136 million years c. 8.5 million/years d. 85 million years
13. How many triple junctions surround the Nazca plate? a. 1 b 2 c 3 d 4 e 5
14. If the Yellowstone volcanic hot spot exploded, in which of the following towns would cars be most
likely covered in ash? a. Anchorage b. Los Angeles c. Portland d. New York e. Seattle.
15. If plate tectonics stopped today what would happen to New York? a. a great earthquake b. its
harbours would become dry mud banks. c. huge sea walls would be needed to keep rising sea level
from flooding Wall Street. d. a tsunami would flood Brooklyn
16. The average speed of the world's mantle convection cells is
a. tenth of an inch a year b ¼" per year c. 2 inches/year d 20 inches each year e 3 feet each yr
17. The *diameter* of the earth's liquid outer core is about
a. 100 km b. 300 km c. 1000 km d. 3000 km e. 6000 km
- 18 What is the average depth of the ocean on this map? a. 3 km b. 4 km c. 5 km d. 6 km e. 8
km
- 19 Assuming the Earth's radius is 6300 km, and that a chunk of ice the area of Rhode Island (1500 sq
miles) and 2 km thick melted on land in Antarctica, how much would sea level rise? [Area of sphere= $4\pi R^2$, 5 miles=8 km] a. 0 mm b. 2 mm c. 2 cm d. 2 m e. 20 m
20. Assuming that the ice in question 19. was an ice sheet floating in water how much would sea level
rise? a. 0 mm b. 2 mm c. 2 cm d. 2 m e. 20 m