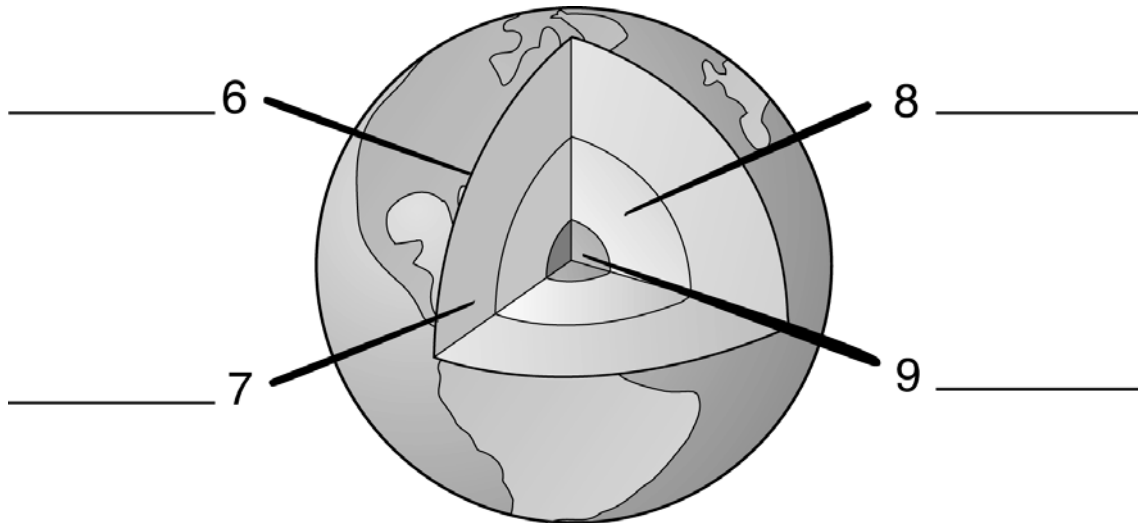


## Plate Tectonics and Your Community: End-of-Chapter Assessment

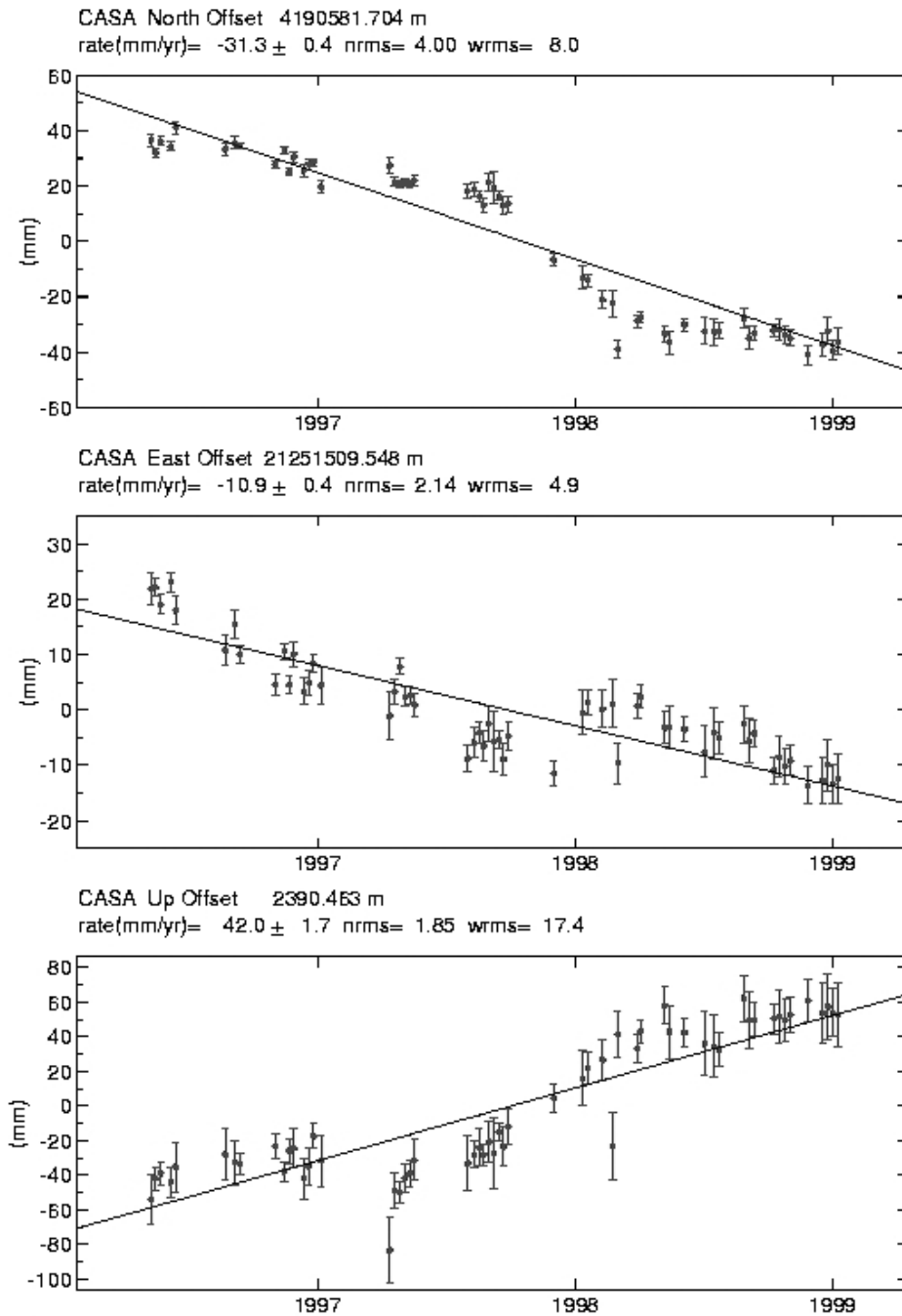
1. The outermost, rigid layer of the Earth, consisting of the Earth's crust and part of the upper mantle, is the \_\_\_\_\_.
  - a) biosphere
  - b) lithosphere
  - c) atmosphere
  - d) asthenosphere
2. With few exceptions, increasing the temperature of a material will cause its density to \_\_\_\_\_.
  - a) increase
  - b) decrease
  - c) stay the same
  - d) increase slightly, then even out
3. What is the density of a material that has a mass of 27.0 g and a volume of 9.0 cm<sup>3</sup>?
  - a) 0.33 g/cm<sup>3</sup>
  - b) 243.0 g/cm<sup>3</sup>
  - c) 36.0 g/cm<sup>3</sup>
  - d) 3.0 g/cm<sup>3</sup>
4. If you used the theory of plate tectonics to predict the most likely place for the next earthquake or volcanic eruption, you should predict that it is most likely to occur:
  - a) Along boundaries between colliding lithospheric plates.
  - b) Where one has not happened in at least 10 million years.
  - c) In the interior of any continent.
  - d) Where a continental lithospheric plate is being subducted beneath an oceanic lithospheric plate.
5. The theory of continental drift did not adequately account for which of the following?
  - a) Why similar rock types were found on continents separated by oceans.
  - b) Why similar fossils were found on continents separated by oceans.
  - c) Why continents drifted across the Earth's surface.
  - d) Why the coastlines of some continents appeared to fit together.

Label the schematic diagram showing the layered structure of the Earth.



10. What event is most likely to occur when an oceanic lithospheric plate collides with a continental lithospheric plate?
- a) The oceanic lithospheric plate will be subducted.
  - b) The continental lithospheric plate will be subducted.
  - c) A rift valley will form in the continental lithospheric plate.
  - d) A hot spot will form in the oceanic lithospheric plate.

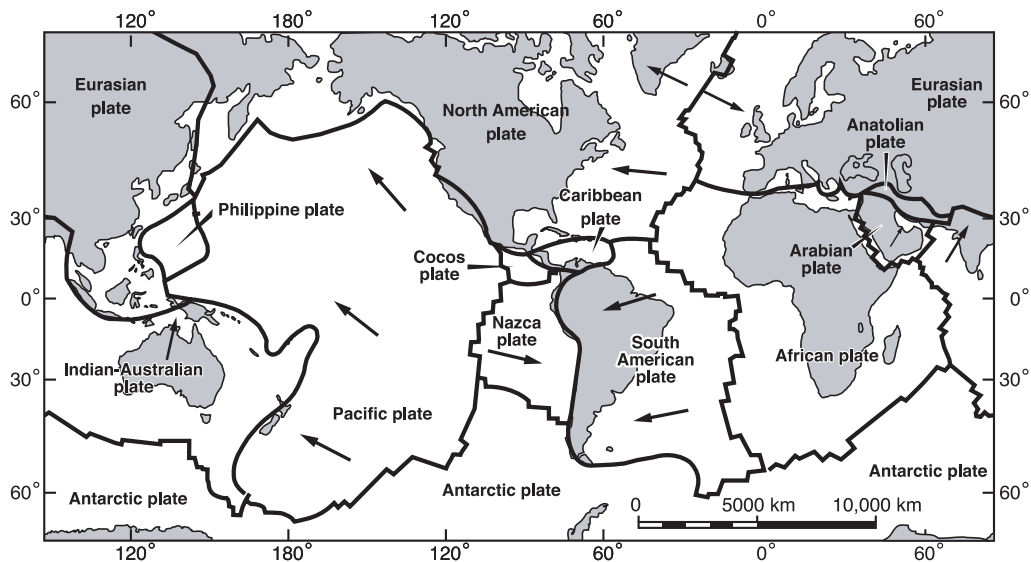
Use the GPS time series data for GPS recording station CASA in California to answer questions 11 – 13.



11. The top graph indicates that station CASA moved at a speed of:
- $10.9 \pm 0.4$  mm/yr West
  - $31.3 \pm 0.4$  mm/yr East
  - $31.3 \pm 0.4$  mm/yr North
  - $31.3 \pm 0.4$  mm/yr South

12. The elevation of station CASA during the recording period has \_\_\_\_\_.
- increased
  - decreased
  - not changed
13. The middle graph indicates that station CASA moved at a rate of:
- $31.3 \pm 0.4$  mm/yr North
  - $10.9 \pm 0.4$  mm/yr East
  - $10.9 \pm 0.4$  mm/yr West
  - $10.9 \pm 0.4$  mm/yr South
14. What is the name of the supercontinent that existed 250 million years ago?
- Gondwanaland
  - Pangea
  - Laurasia
  - North America

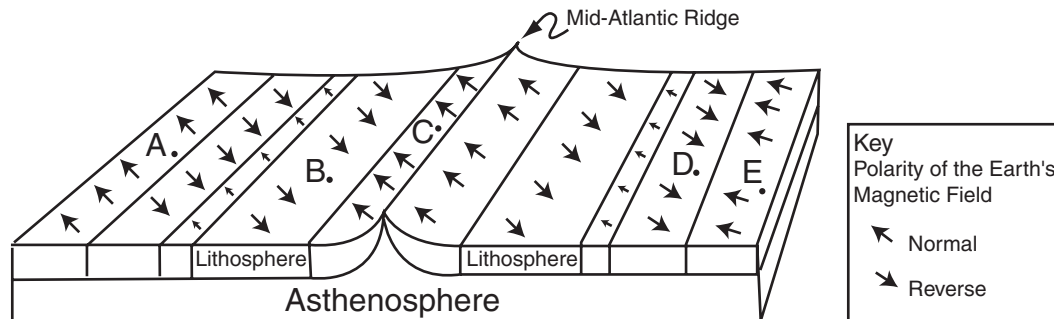
Use the map below to answer questions 15 – 17:



15. What type of geologic feature would you expect to find along the west coast of South America?
- A rift valley.
  - A chain of volcanoes.
  - An ocean ridge.
  - A transform fault.

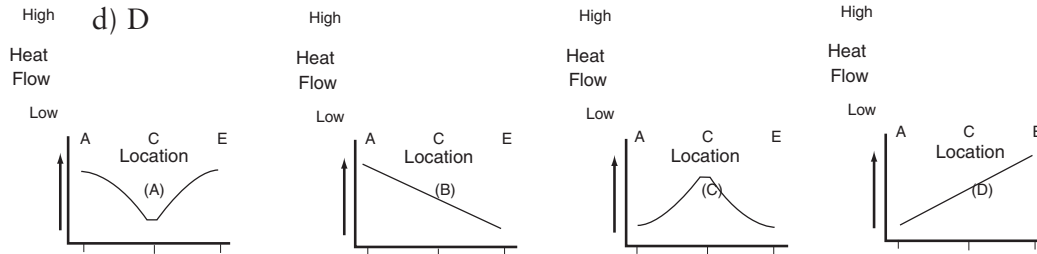
16. What is the east coast of the United States an example of?
- Divergent continental margin.
  - Convergent plate boundary.
  - Transform plate boundary.
  - Passive continental margin.
17. At which of these boundaries would you expect to find oceanic lithosphere being created?
- Between the South American and Nazca plates.
  - Between the Pacific and North American plates.
  - Between the North American and Eurasian plates.
18. What has become the accepted primary mechanism for sea-floor spreading?
- Density differences in the crust.
  - Convection cells within the Earth's mantle.
  - The formation of magnetic striping along the sea floor.
  - The tremendous weight of sea-floor sediments piled up over millions of years.

Base your answers to questions 19-21 on the diagram below. The diagram shows a portion of the Earth's oceanic crust in the vicinity of the mid-Atlantic ridge. The stripes in the diagram represent magnetic bands of igneous rock formed in the oceanic crust. The orientation of the Earth's magnetic field at the time of rock formation is shown by arrows within each band. Letters A, B, C, D, and E represent locations on the sea floor.



19. Heat flow measurements are made at locations A through E. Which graph best represents these measurements?

- a) A
- b) B
- c) C
- d) D



20. Rock samples taken from location B would most likely be composed of:

- a) granite
- b) rhyolite
- c) conglomerate
- d) basalt

21. Along a line drawn from location A to location E, the relative age of the oceanic crust would most likely:

- a) Decrease from A to C and increase from C to E.
- b) Increase from A to C and decrease from C to E.
- c) Decrease from A to E.
- d) Increase from A to E.

22. What do mid-ocean ridges and hot spots beneath ocean plates have in common?

- a) Both have rising magma due to density differences.
- b) Both are located along crustal plate boundaries.
- c) Both have local earthquakes that originate at great depths.
- d) Neither is associated with plate motions.