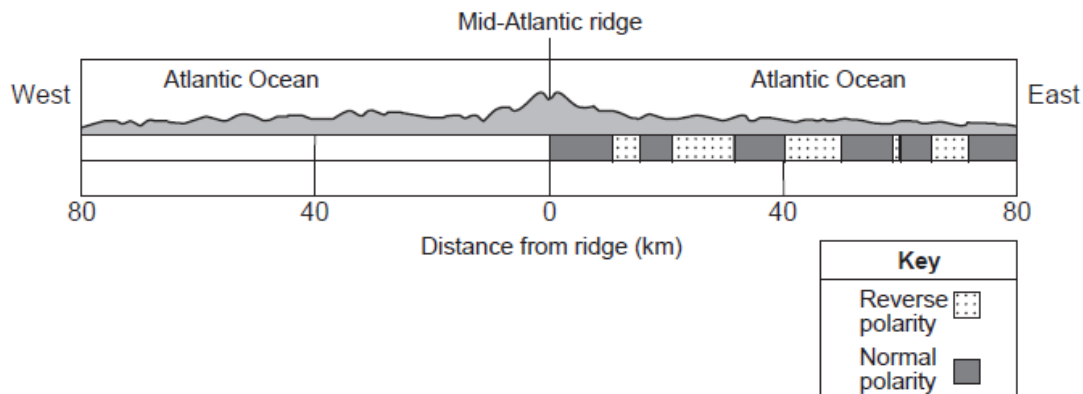


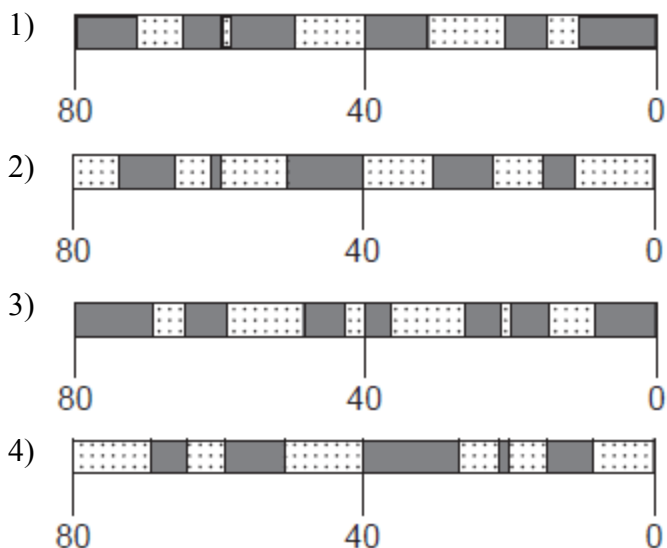
Seafloor Spreading/Divergent Plate Boundaries HW

Name _____

1. The cross section below represents a pattern of magnetic field reversals preserved in the igneous bedrock of the oceanic crust east of the Mid-Atlantic ridge.



Which cross section best represents the magnetic field pattern west of the Mid-Atlantic ridge?



2. Which geologic feature is composed of the youngest crustal bedrock?

- 1) Peru-Chile Trench
- 2) Mid-Atlantic Ridge
- 3) Adirondack Mountains
- 4) San Andreas Fault

3. Crustal formation, which may cause the widening of an ocean, is most likely occurring at the boundary between the

- 1) African Plate and the Eurasian Plate
- 2) Pacific Plate and the Philippine Plate
- 3) Indian-Australian Plate and the Antarctic Plate
- 4) South American Plate and the North American Plate

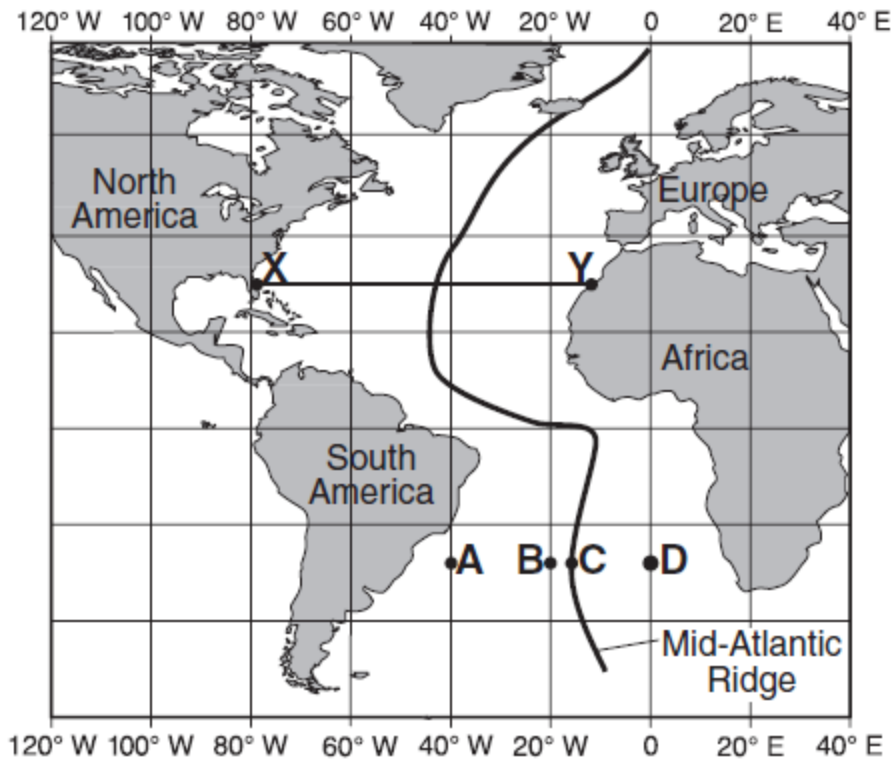
4. Which observation about the Mid-Atlantic Ridge region provides the best evidence that the seafloor has been spreading for millions of years?

- 1) The bedrock of the ridge and nearby seafloor is igneous rock.
- 2) The ridge is the location of irregular volcanic eruptions.
- 3) Several faults cut across the ridge and nearby seafloor.
- 4) Seafloor bedrock is younger near the ridge and older farther away.

5. In which Earth layer are most convection currents that cause seafloor spreading thought to be located?

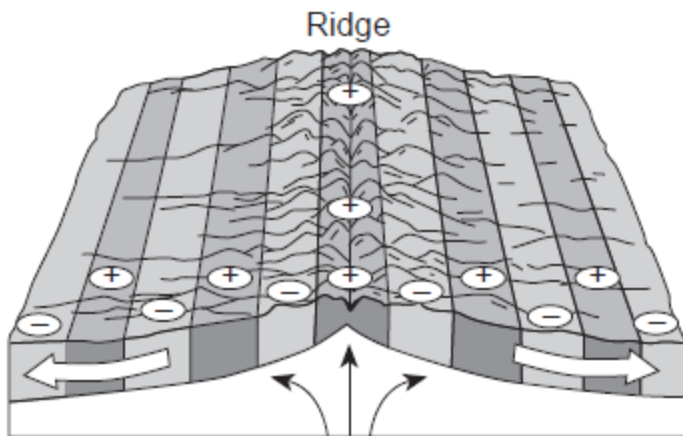
- | | |
|---------------|------------------|
| 1) crust | 2) asthenosphere |
| 3) outer core | 4) inner core |

6. Base your answer to the following question on the map of the Mid-Atlantic Ridge shown below. Points *A* through *D* are locations on the ocean floor. Line *XY* connects locations in North America and Africa.



Samples of ocean-floor bedrock were collected at points *A*, *B*, *C*, and *D*. Which sequence show the correct order of the age of the bedrock from oldest to youngest?

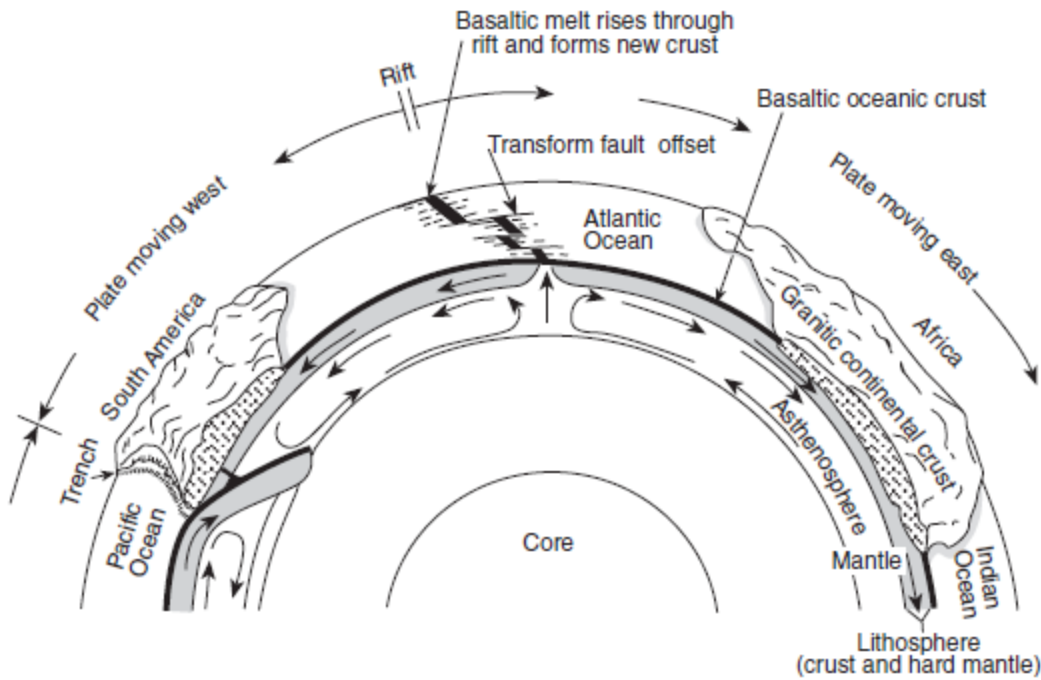
- 1) $D \rightarrow C \rightarrow B \rightarrow A$ 2) $A \rightarrow D \rightarrow B \rightarrow C$
 3) $C \rightarrow B \rightarrow D \rightarrow A$ 4) $A \rightarrow B \rightarrow D \rightarrow C$
7. The block diagram below represents the present ocean floor. The white arrows show the movement of the ocean floor and the black arrows show the movement of the asthenosphere.



Which characteristic of the ocean-floor bedrock is best described by the plus and minus symbols in the diagram?

- 1) plus = older age; minus = younger age
 2) plus = younger age; minus = older age
 3) plus = reversed magnetic polarity; minus = normal magnetic polarity
 4) plus = normal magnetic polarity; minus = reversed magnetic polarity

8. Base your answer to the following question on the diagram below. The diagram shows a model of the relationship between Earth's surface and its interior.

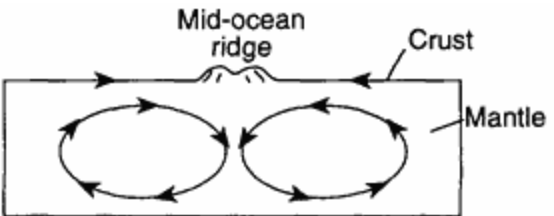
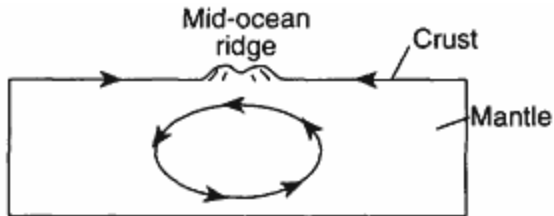
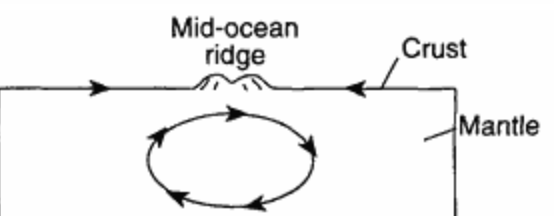
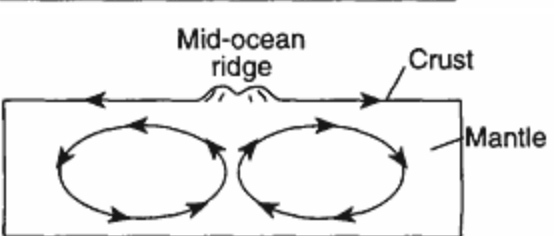


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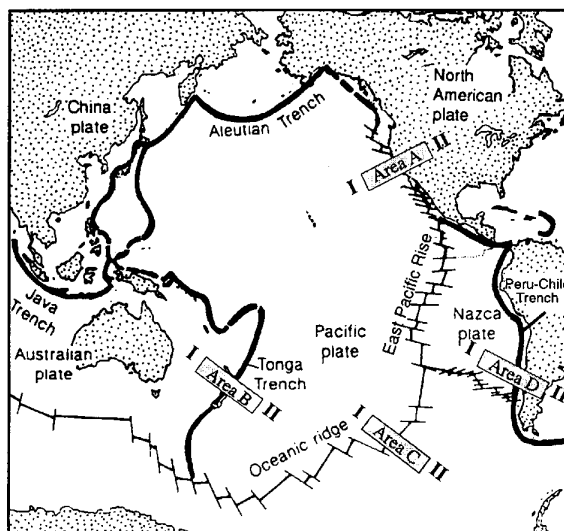
Mid-ocean ridges (rifts) normally form where tectonic plates are

- 1) converging
- 2) diverging
- 3) stationary
- 4) sliding past each other

9. Which cross-sectional diagram of a portion of the crust and mantle best shows the pattern of mantle convection currents that are believed to cause the formation of a mid-ocean ridge?

- 1) 
- 2) 
- 3) 
- 4) 

10. Base your answer to the following question on the map below which shows mid-ocean ridges and trenches in the Pacific Ocean. Specific areas A, B, C, and D are indicated by shaded rectangles.



The crust at the mid-ocean ridges is composed mainly of

- 1) shale
- 2) limestone
- 3) granite
- 4) basalt