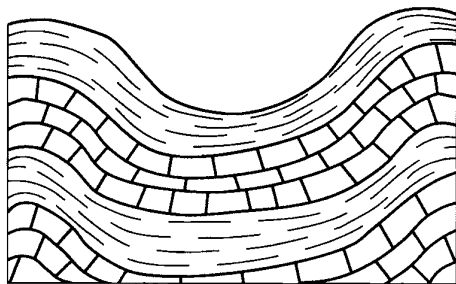


# Crustal Movement and Continental Drift

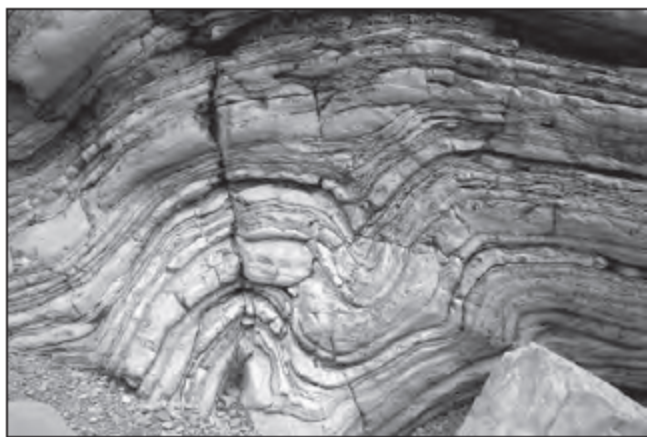
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1. The cross section below shows a portion of Earth's crust.



Which observation provides the most direct evidence that crustal plate collision has occurred near this region?

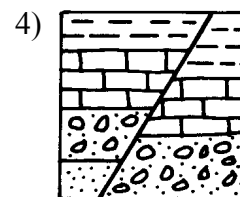
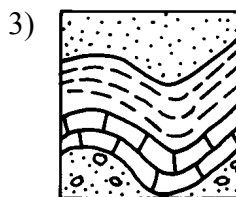
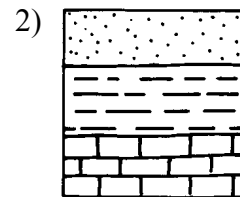
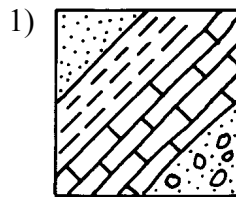
- 1) alternating layers of shale and limestone bedrock
  - 2) absence of an igneous intrusive rock
  - 3) different thicknesses of the sedimentary layers
  - 4) folding of the sedimentary layers
2. The photograph below shows the bedrock structure of a limestone outcrop.



Which process is responsible for the deformation of this bedrock?

- 1) folding
  - 2) weathering
  - 3) mass movement
  - 4) volcanic activity
3. Which event provides direct evidence of crustal movement?
- 1) the erosion of the outside of a river curve
  - 2) the deposition of sediments in the ocean
  - 3) the displacement of rock strata during an earthquake
  - 4) the weathering of rock to form a residual soil

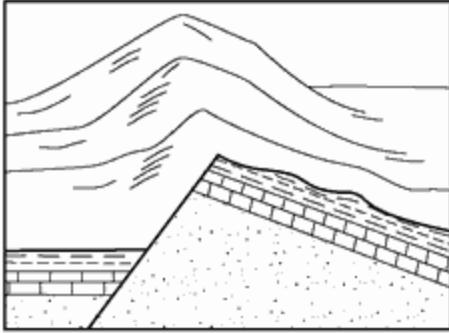
4. The diagrams below show cross sections of exposed bedrock. Which cross section shows the *least* evidence of crustal movement?



- 1) the cold water deep in the ocean kills shallow-water organisms
  - 2) sunlight once penetrated to the deepest parts of the ocean
  - 3) organisms that live in deep water evolved from species that once lived in shallow water
  - 4) sections of the Earth's crust have changed their elevations relative to sea level
6. Fossils of marine plants and animals are found in the bedrock of mountains many thousands of feet above sea level. The most likely reason for this observation is that
- 1) the mountains were part of a mid-ocean ridge
  - 2) the ocean level has dropped several thousand feet
  - 3) forces within the Earth caused uplift
  - 4) transported materials were deposited at high elevations
7. Based on the theory of plate tectonics, it is inferred that over the past 250 million years North America has moved toward the
- 1) northwest
  - 2) southwest
  - 3) southeast
  - 4) northeast

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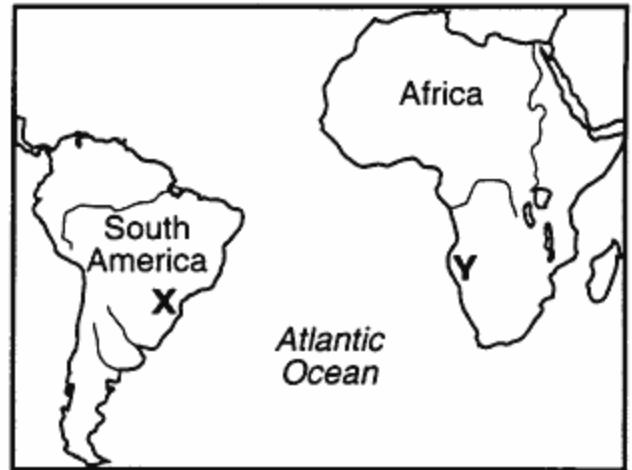
8. The diagram below shows the bedrock structure beneath a series of hills.



Which process was primarily responsible for forming the hills?

- 1) folding
  - 2) faulting
  - 3) deposition
  - 4) vulcanism
9. The large coal fields found in Pennsylvania provide evidence that the climate of the northeastern United States was much warmer during the Carboniferous Period. This change in climate over time is best explained by the
- 1) movements of tectonic plates
  - 2) effects of seasons
  - 3) changes in the environment caused by humans
  - 4) evolution of life
10. Living corals are found in warm, shallow seas. Coral fossils have been found in the sedimentary rocks of Alaska. These findings suggest that
- 1) Alaska once had a tropical marine environment
  - 2) Alaska's cold climate fossilized the coral
  - 3) coral usually develops in cold climates
  - 4) ocean currents carried the coral to Alaska
11. Which statement best supports the theory that all the continents were once a single landmass?
- 1) Rocks of the ocean ridges are older than those of the adjacent sea floor.
  - 2) Rock and fossil correlation can be made where the continents appear to fit together.
  - 3) Marine fossils can be found at high elevations above sea level on all continents.
  - 4) Great thicknesses of shallow-water sediments are found at interior locations on some continents.

12. The map below shows the present-day locations of South America and Africa. Remains of *Mesosaurus*, an extinct freshwater reptile, have been found in similarly aged bedrock formed from lake sediments at locations X and Y.

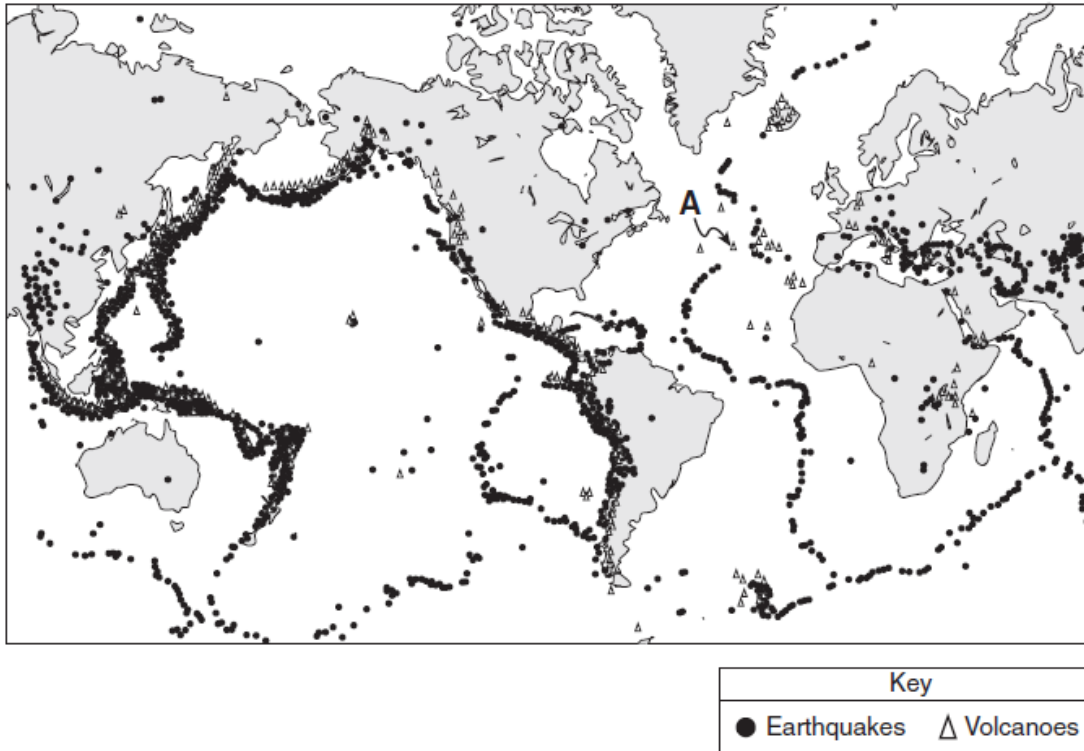


Which statement represents the most logical conclusion to draw from this evidence?

- 1) *Mesosaurus* migrated across the ocean from location X to location Y.
  - 2) *Mesosaurus* came into existence on several widely separated continents at different times.
  - 3) The continents of South America and Africa were joined when *Mesosaurus* lived.
  - 4) The present climates at locations X and Y are similar.
13. According to plate tectonic theory, during which geologic time interval did the continents of North America and Africa separate, resulting in the initial opening of the Atlantic Ocean?
- 1) Mesozoic Era
  - 2) Paleozoic Era
  - 3) Proterozoic Eon
  - 4) Archean Eon

## Crustal Movement and Continental Drift

14. Base your answer to the following question on the world map in your answer booklet and on your knowledge of Earth science. The map shows major earthquakes and volcanic activity occurring from 1996 through 2000. Letter A represents a volcano on a crustal plate boundary.



Explain why most major earthquakes are found in specific zones instead of being randomly scattered across Earth's surface.

15. The diagram below shows how scientists think some of Earth's continents were joined together in the geologic past.



When do scientists think these continents were joined together?

- 1) during the Tertiary Period, only
- 2) from the Cretaceous Period through the Tertiary Period
- 3) from the Devonian Period through the Triassic Period
- 4) during the Cambrian Period, only