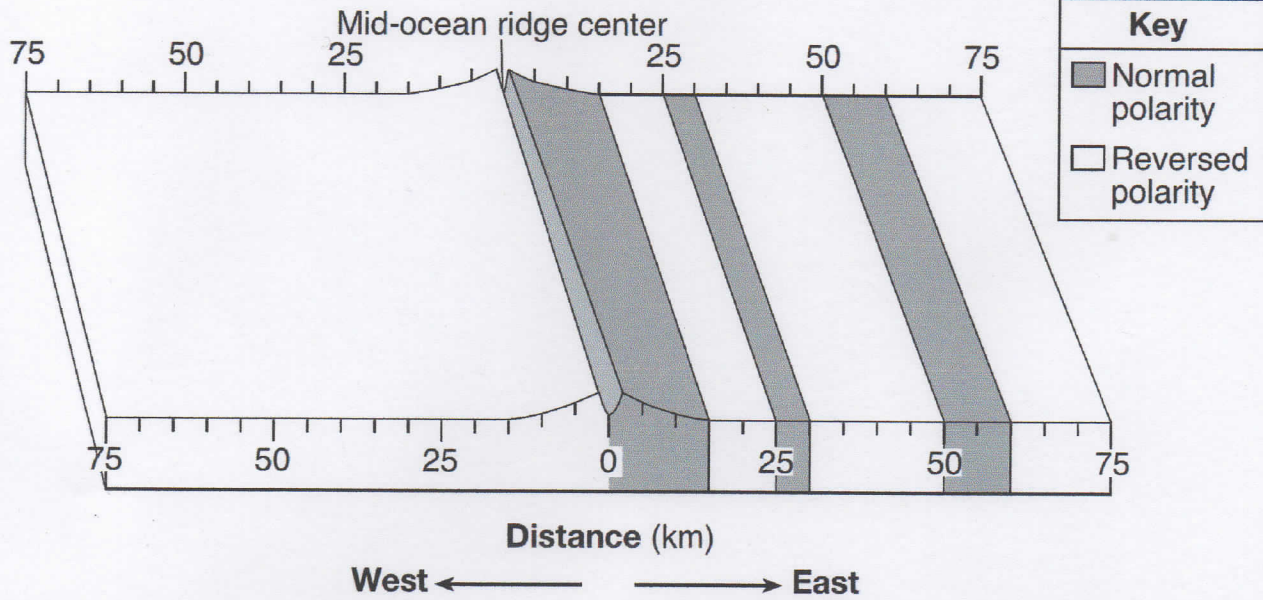


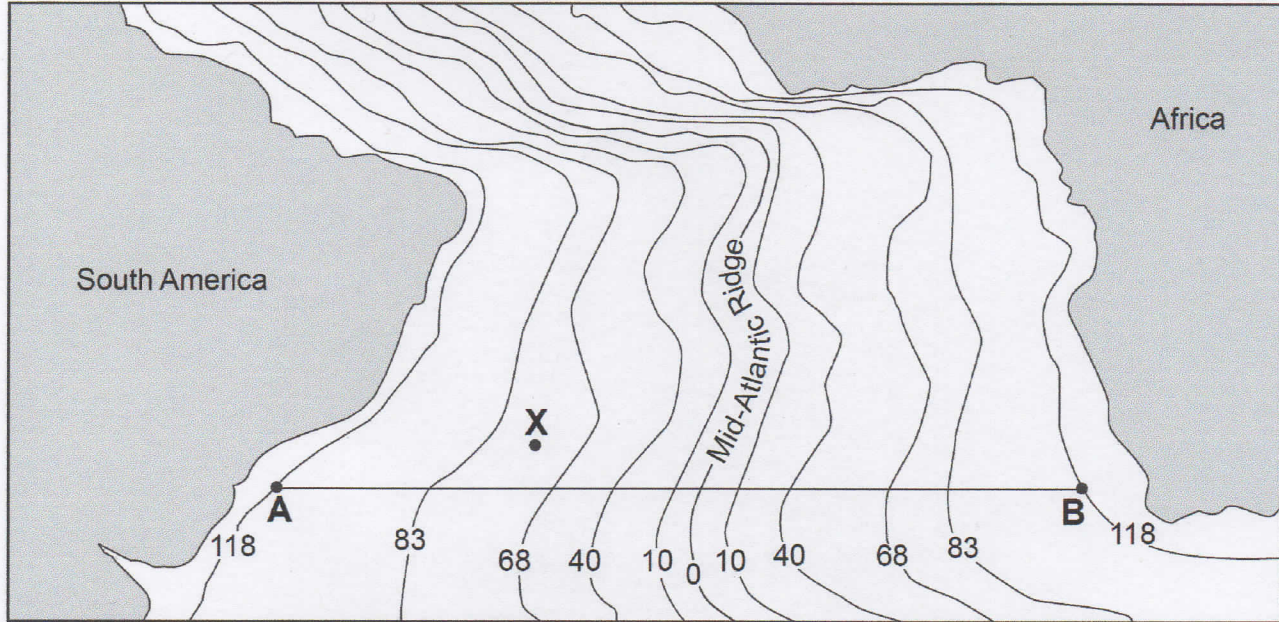
Base your answers to questions 1 and 2 on the block diagram and on your knowledge of Earth science. The diagram represents the pattern of normal and reversed magnetic polarity of the seafloor bedrock on the east side of a mid-ocean ridge center. The magnetic polarity of the bedrock on the west side of the ridge has been omitted. Arrows represent the direction of seafloor movement on either side of the ridge.



1. Describe the general relationship between the distance from the ridge center and the age of the seafloor bedrock.

2. Complete the diagram by shading the pattern of normal polarity on the west side of the ridge center. Assume the rate of plate movement was constant on both sides of the ridge center. Your answer must show the correct width and placement of *each* normal polarity section.

3. Base your answer to the following question #s 3 through 5 on the generalized map below, which shows a portion of the Atlantic Ocean floor located between South America and Africa. Isolines show the approximate age, in million years, of the ocean-floor bedrock on each side of the Mid-Atlantic Ridge. Points A, B, and X represent locations on the ocean floor.



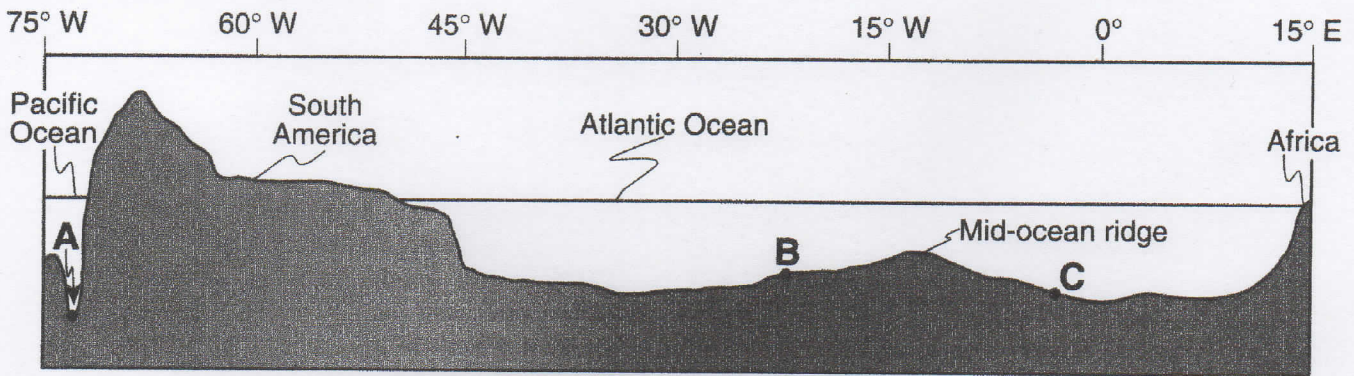
The Mid-Atlantic Ridge separates pairs of crustal plates, such as the South American Plate and the African Plate. Identify *one other* pair of crustal plates separated by the Mid-Atlantic Ridge.

4. Explain why the age of the ocean-floor bedrock increases as the distance from the Mid-Atlantic Ridge increases.

5. Estimate the age of the ocean-floor bedrock at point X.

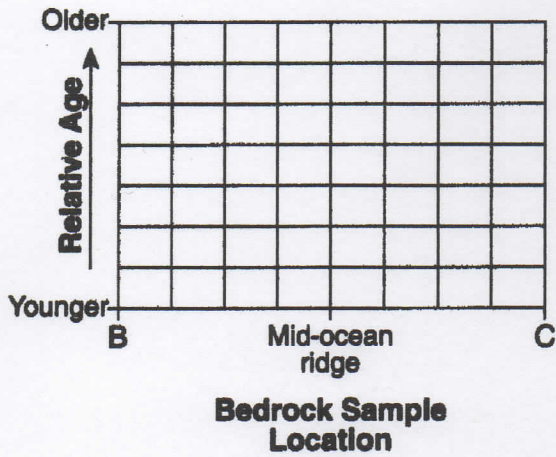


6. Base your answer to the following question on the cross section below, which shows the major surface features of Earth along 25° S latitude between 75° W and 15° E longitude. Points *A*, *B*, and *C* represent locations on Earth's crust.

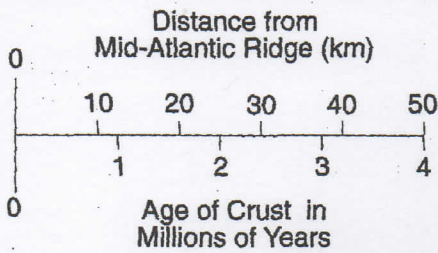


(Not drawn to scale)

Bedrock samples were taken at the mid-ocean ridge and points *B* and *C*. On the grid, draw a line to show the relative age of the bedrock samples between these locations.



7. The scale below shows the age of the sea-floor crust in relation to its distance from the Mid-Atlantic Ridge.



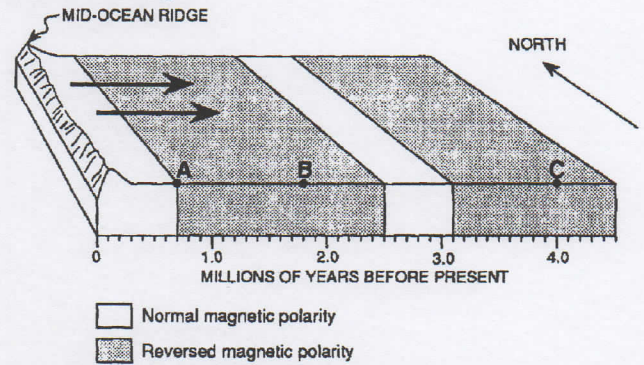
Crust that originally formed at the Mid-Atlantic Ridge is now 37 kilometers from the ridge. Approximately how long ago did this crust form?

- A) 1.8 million years ago
- B) 2.0 million years ago
- C) 3.0 million years ago
- D) 4.5 million years ago

8. Base your answer to the following question on the information and diagram below.

At intervals in the past, the Earth's magnetic field has reversed. The present North magnetic pole was once the South magnetic pole, and the present South magnetic pole was once the North magnetic pole. A record of these changes is preserved in the igneous rocks that formed at mid-ocean ridges and moved away from the ridges.

The diagram below represents the pattern of normal and reversed magnetic polarity in the igneous rocks composing the ocean crust on the east side of a mid-ocean ridge.



Which diagram below best shows the pattern of normal and reversed polarity on the west side of the mid-ocean ridge?

- A)
- B)
- C)
- D)