

Name: _____

Date: _____ Period: _____

Regents Review: Plate Tectonics

1. Which type of plate boundary is found between South American Plate and the Scotia Plate?
 - a. transform
 - b. convergent
 - c. divergent
 - d. complex or uncertain
2. Which geologic feature is composed of the youngest crustal bedrock?
 - a. Peru-Chile Trench
 - b. Mid-Atlantic Ridge
 - c. Adirondack Mountains
 - d. San Andreas Fault
3. Earth's magnetic field has reversed itself several times during the past. This pattern of magnetic reversal is best preserved in
 - a. metamorphic bedrock in mountain ranges
 - b. bedrock with fossils containing radioactive carbon-14
 - c. layers of sedimentary bedrock of the Grand Canyon
 - d. igneous bedrock of the oceanic crust
4. What is the approximate latitude and longitude of the Bouvet Hot Spot?
 - a. 54° N 3° W
 - b. 54° S 3° E
 - c. 3° N 54° E
 - d. 3° S 54° W
5. As the distance from the Mid-Atlantic Ridge increases, the age of the ocean floor bedrock
 - a. decreases, only
 - b. increases, only
 - c. decreases, then increases
 - d. increases, then decreases
6. What is the primary reason that oceanic crust subducts beneath continental crust?
 - a. Oceanic crust deforms less easily
 - b. Oceanic crust melts at higher temperatures
 - c. Oceanic crust contains more felsic minerals
 - d. Oceanic crust is more dense
7. The west coast of South America is best described as
 - a. convergent plate boundary
 - b. divergent plate boundary
 - c. transform plate boundary
 - d. none of the above

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8. Most of the tectonic plate boundaries of the Scotia Plate are classified as
 - a. transform boundaries with the plates moving in a relative east–west direction
 - b. transform boundaries with the plates moving in a relative north–south direction
 - c. divergent boundaries with the plates moving in a relative east–west direction
 - d. divergent boundaries with the plates moving in a relative north–south direction

9. It is inferred that over the past 250 million years North America has moved toward the
 - a. northwest
 - b. southwest
 - c. southeast
 - d. northeast

10. According to tectonic plate maps, New York State is presently located
 - a. at a convergent plate boundary
 - b. above a mantle hot spot
 - c. above a mid-ocean ridge
 - d. near the center of a large plate

11. Which coastal area is most likely to experience a severe earthquake?
 - a. east coast of North America
 - b. east coast of Australia
 - c. west coast of Africa
 - d. west coast of South America

12. The primary cause of convection currents in Earth's mantle is believed to be caused by
 - a. differences in densities of earth materials
 - b. subsidence of the crust
 - c. occurrence of earthquakes
 - d. rotation of the Earth

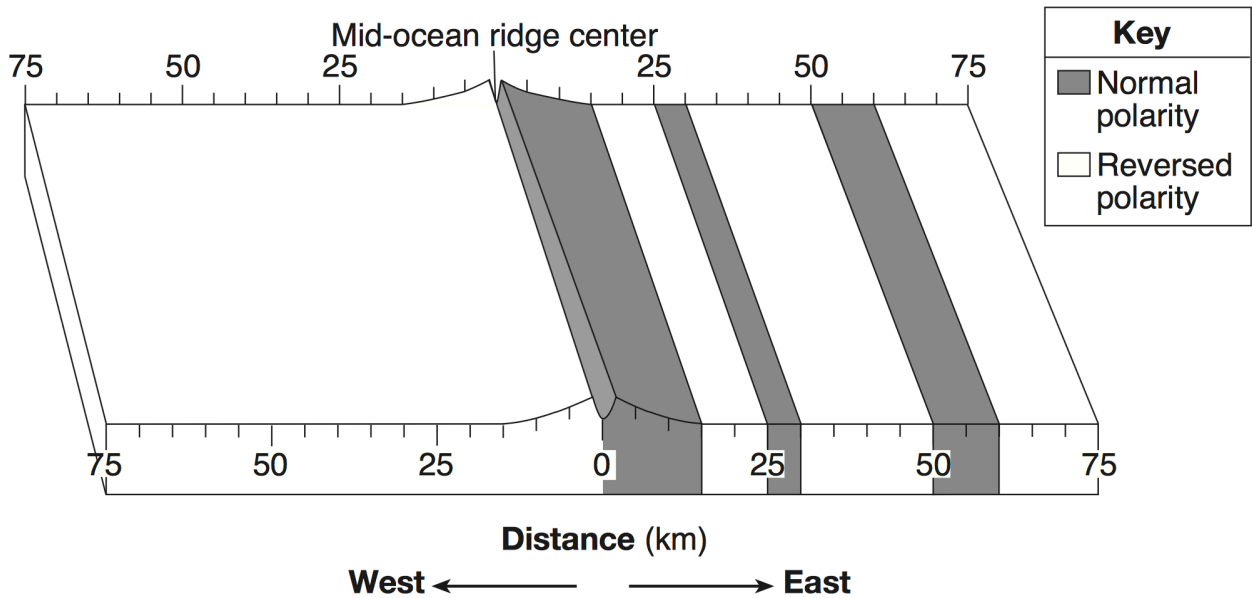
13. What is occurring at the Southeast Indian Ridge?
 - a. New oceanic crust is forming.
 - b. Old oceanic crust is being destroyed.
 - c. New continental crust is forming.
 - d. Old continental crust is being destroyed.

14. Which evidence does *not* support the theory that Africa and South America were once Pangaea?
 - a. correlation of coastlines on opposite sides of the Atlantic Ocean
 - b. correlation of living animals on opposite sides of the Atlantic Ocean
 - c. correlation of rocks on opposite sides of the Atlantic Ocean
 - d. correlation of fossils on opposite sides of the Atlantic Ocean

15. When did Pangaea initially start to break up and begin to separate?
 - a. 65 million years ago
 - b. 142 million years ago
 - c. 232 million years ago
 - d. 542 million years ago

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Base your answers to questions 16 and 17 on the block diagram in your answer booklet 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.



11. Complete the diagram in your answer booklet 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.

12. Describe the relationship between the distance from the ridge center and the age of the seafloor.

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Base your answers to questions 13 through 14 on the passage below, the cross section in your answer booklet, and on your knowledge of Earth science. The passage describes the discovery of ocean floor magnetism. The cross section represents a pattern of normal and reverse polarity of the magnetic field preserved in the igneous bedrock of the oceanic crust west of the Mid-Atlantic Ridge. The magnetic polarity pattern of the bedrock on the east side of the ridge has been left blank.

Ocean Floor Magnetism

Scientists in the early 1960s were surprised to find there was a pattern in the ocean floor magnetism preserved in the bedrock of the Atlantic Ocean floor. They found that the magnetism in the bedrock was arranged in an orderly pattern parallel to the Mid-Atlantic Ridge. This mountain ridge, often marked by earthquakes and volcanic eruptions, runs roughly north-south. Earth is currently in a period of normal polarity. However, the magnetic record preserved in the rocks indicates that Earth's magnetic poles have reversed positions many times in the past. Since the initial discovery of this ocean floor magnetism, similar magnetic patterns have also been found parallel to the mid-ocean ridges in all of the other oceans.

13. Identify the type of tectonic plate boundary at the mid-ocean ridges where these magnetic patterns were produced.
14. On the set of axes in your answer booklet, draw a line to represent the relationship between the distance from the Mid-Atlantic Ridge and the age of the ocean floor bedrock.

