

Plate Tectonics

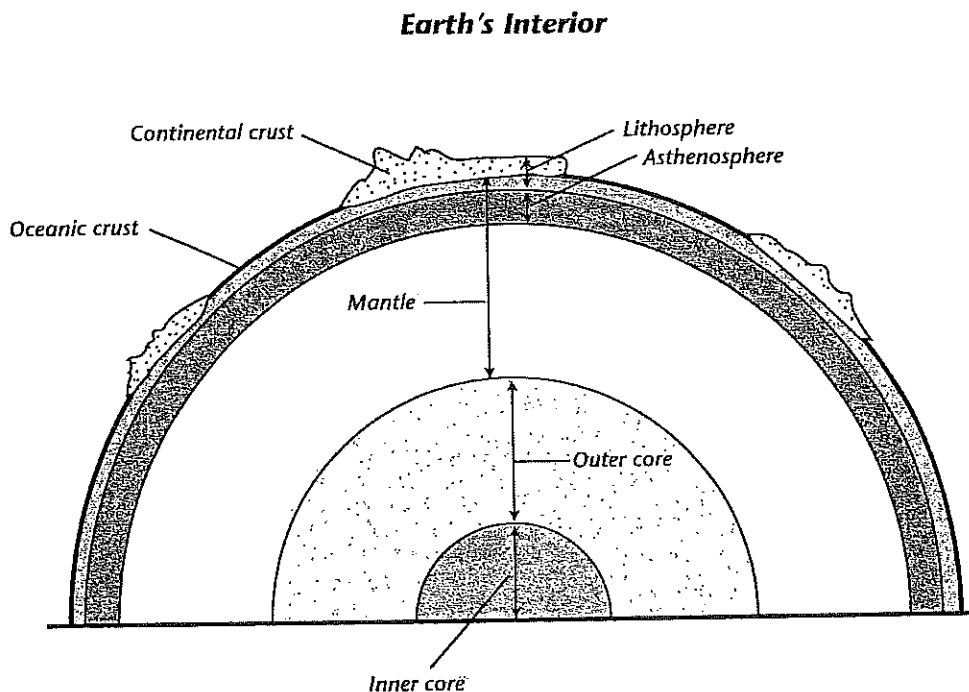
Completion

Complete each sentence or statement.

1. When continental plates pull apart at a divergent boundary on land, a(n) _____ forms.
2. The lithosphere is broken into sections called _____, which float on top of the asthenosphere.
3. Wegener believed that the continents had once been joined in one landmass called _____.
4. The hypothesis of _____ was that all the continents once were joined as a single supercontinent and have since drifted apart.
5. The ocean floor sinks beneath a deep-ocean trench and back into the mantle in a process known as _____.
6. Earthquakes produce _____ that travel through Earth.
7. Scientists think that the _____, made of liquid iron and nickel, moves to produce Earth's magnetic field.
8. Subduction occurs where the oceanic crust bends down toward the mantle at a(n) _____.
9. The energy from the sun that warms your face is transferred by a process called _____.
10. In the mantle, heat is transferred as soft rock flows slowly in cycles known as _____.
11. The part of the mantle called the _____ is made of soft rock that bends like plastic.
12. To support his hypothesis, Alfred Wegener provided evidence from _____, traces of ancient organisms preserved in rock.

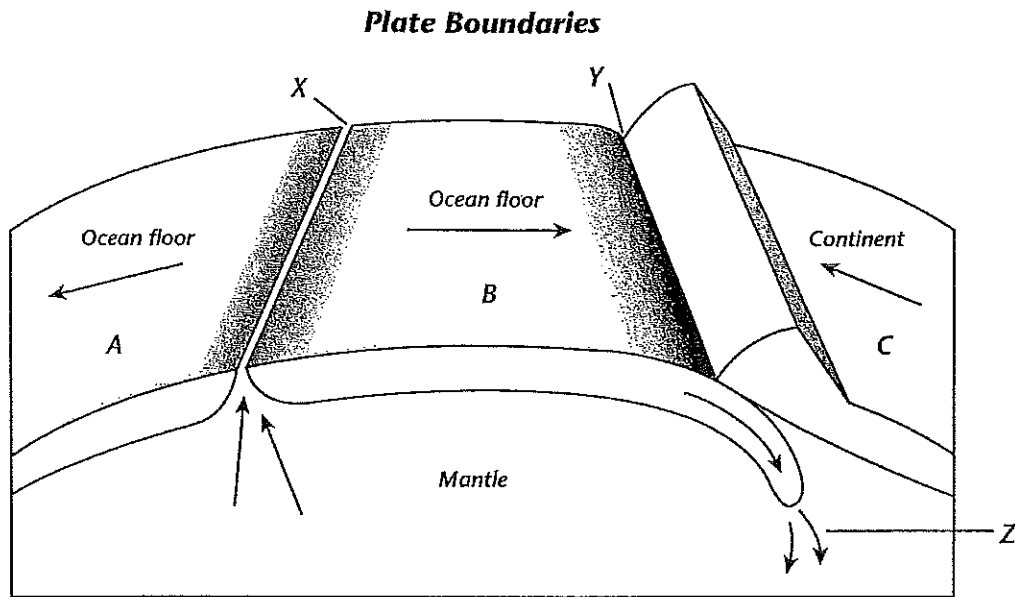
Short Answer

Use the diagram to answer each question.



13. Pressure increases with depth toward the center of Earth. In which layer would you expect pressure to be the greatest?
14. The asthenosphere is part of which layer of Earth?
15. Based on the diagram, describe one of the major differences between oceanic crust and continental crust.
16. Earth's solid inner core is surrounded by the hot, molten metal of which layer?
17. According to the theory of plate tectonics, which layer of the earth is broken into separate sections called plates?

Use the diagram to answer each question.



18. What is happening at Z?
19. What feature occurs at X and how does it form?
20. Which type of plate boundary occurs at Y?
21. Identify the three plates in the diagram and name the materials that make up each plate.
22. What feature occurs at Y, and how does it form?
23. Which type of plate boundary occurs at X?

Essay

24. Describe how the shapes of present-day continents support the theory of continental drift.
25. Compare and contrast the outer core and the inner core.
26. Were Africa and South America ever joined? Cite evidence from a landform and fossil to support your answer.
27. Describe the convection currents that occur inside Earth.
28. According to the theory of plate tectonics, explain what causes changes in Earth's surface.

Multiple Choice

Identify the letter of the choice that best completes the statement or answers the question.

- _____ 29. In sea-floor spreading, molten material rises from the mantle and erupts
- along mid-ocean ridges.
 - at the north and south poles.
 - along the edges of all the continents.
 - in deep-ocean trenches.
- _____ 30. Most geologists rejected Alfred Wegener's idea of continental drift because
- they were afraid of a new idea.
 - Wegener was interested in what Earth was like millions of years ago.
 - Wegener could not identify a force that could move the continents.
 - Wegener used several different types of evidence to support his hypothesis.
- _____ 31. A collision between two pieces of continental crust at a converging boundary produces a
- deep-ocean trench.
 - mid-ocean ridge.
 - mountain range.
 - rift valley.
- _____ 32. Most geologists think that the movement of Earth's plates is caused by
- earthquakes.
 - conduction.
 - Earth's magnetic field.
 - convection currents in the mantle.
- _____ 33. Any trace of an ancient organism that has been preserved in rock is called a
- landform.
 - landmass.
 - fossil.
 - continent.
- _____ 34. What is Pangaea?
- another name for continental drift
 - the name of an ancient fossil
 - the name of the supercontinent that existed millions of years ago
 - the name of a German scientist
- _____ 35. According to Wegener's hypothesis of continental drift,
- Earth is slowly cooling and shrinking.
 - the continents were once joined together in a single landmass.
 - the continents do not move.
 - Earth's surface is made up of seven major landmasses.
- _____ 36. The geological theory that states that pieces of Earth's lithosphere are in constant, slow motion is the theory of
- plate tectonics.
 - subduction.
 - sea-floor spreading.
 - deep-ocean trenches.

- ___ 37. When the heat source is removed from a fluid, convection currents in the fluid will
- change direction.
 - speed up.
 - eventually stop.
 - continue at the same rate forever.
- ___ 38. Using data from seismic waves, geologists have learned that Earth's interior is made up of several
- trenches.
 - continents.
 - ridges.
 - layers.
- ___ 39. When you touch a hot pot or pan, energy moves from the pot to your hand. This is called
- magnetic energy.
 - heat transfer.
 - indirect evidence.
 - subduction.
- ___ 40. Earth's mantle is
- a layer of molten metal.
 - a layer of hot rock.
 - a layer of rock that forms Earth's outer skin.
 - a dense ball of solid metal.
- ___ 41. What is the correct order (starting from the surface) of Earth's layers?
- outer core, inner core, crust, mantle
 - crust, mantle, outer core, inner core
 - mantle, outer core, inner core, crust
 - crust, outer core, inner core, mantle
- ___ 42. Earth's magnetic field results from movements in the
- crust.
 - inner core.
 - mantle.
 - outer core.
- ___ 43. Scientists think that convection currents flow in Earth's
- inner core.
 - mantle.
 - lithosphere.
 - continents.
- ___ 44. The transfer of energy through empty space is called
- radiation.
 - conduction.
 - subduction.
 - convection.
- ___ 45. Earth's inner core is
- a layer of rock that forms Earth's outer skin.
 - a layer of molten metal.
 - a layer of hot rock.
 - a dense ball of solid metal.

Name: _____

ID: B

- _____ 46. Heat transfer within a fluid takes place by
- a. convection currents.
 - b. conduction.
 - c. density.
 - d. radiation.
- _____ 47. Which type of evidence was NOT used by Alfred Wegener to support his continental drift hypothesis?
- a. evidence from landforms
 - b. evidence from human remains
 - c. evidence from fossils
 - d. evidence from climate
- _____ 48. The place where two plates come together is known as a
- a. convergent boundary.
 - b. transform boundary.
 - c. rift valley.
 - d. divergent boundary.
- _____ 49. A rift valley forms at a
- a. transform boundary.
 - b. convergent plate boundary
 - c. deep-ocean trench.
 - d. divergent plate boundary.