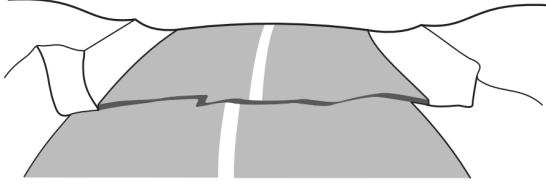


6.E.2.2 Plate Tectonics, Earthquakes and Volcanoes

Name: _____

Date: _____

1. The road shown below was suddenly broken by a natural event.



Which natural event *most likely* caused the crack in the road?

- (A) wind
 - (B) earthquake
 - (C) a lava flow from a volcano
 - (D) an avalanche down a mountain
2. Which of the following is the best evidence that Earth's continents were once in vastly different positions than they are today?
- (A) Penguins are found only in the Southern Hemisphere.
 - (B) Fossils of tropical plants are found in Antarctica.
 - (C) Volcanoes encircle the Pacific Ocean.
 - (D) Major rivers form deltas from continental erosion.

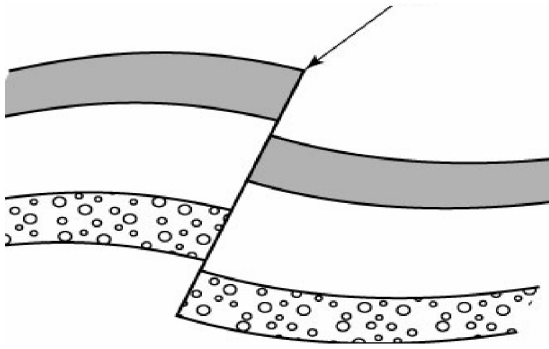
3. The convergence of two continental plates would produce

- (A) island arcs.
- (B) rift valleys.
- (C) folded mountains.
- (D) trenches.

4. Which of these is an immediate result of the movement of tectonic plates?

- (A) ocean currents
- (B) earthquakes
- (C) glaciers
- (D) tides

5. The diagram below shows a geologic cross-section.



Which of these does the arrow indicate?

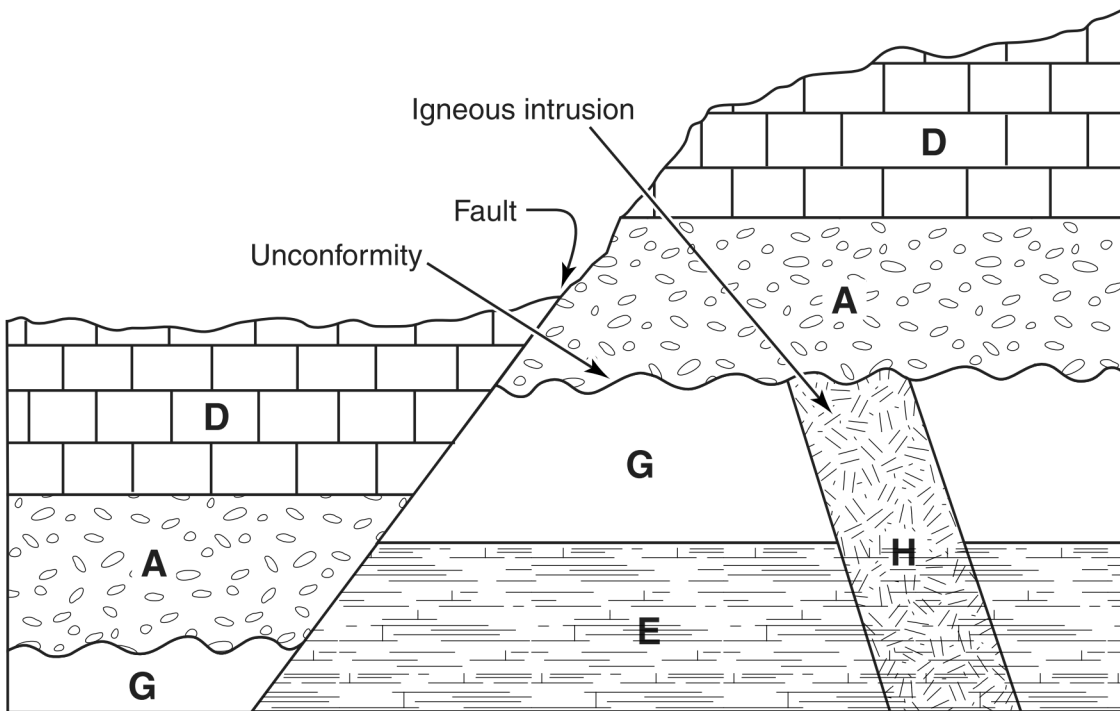
- (A) a magma chamber
 - (B) a fault line
 - (C) a tectonic plate
 - (D) a volcanic vent
6. If the locations of earthquakes over the past 10 years were plotted on a world map, which of the following would be observed?
- (A) Earthquakes occur with the same frequency everywhere on Earth.
 - (B) Earthquakes generally occur along the edges of tectonic plates.
 - (C) Earthquakes most frequently occur near the middle of continents.
 - (D) Earthquakes do not seem to occur in any consistent pattern.
7. Of the following statements, which best supports the continental drift theory?
- (A) All oceans are salty.
 - (B) Igneous rocks are found on all continents.
 - (C) Fossils of the same species of extinct land plants have been found in both South America and Africa.
 - (D) Early humans migrated to North America over a land bridge from eastern Asia.

Earth scientists use theories and principles to help determine the relative age and formation of rocks and landforms.

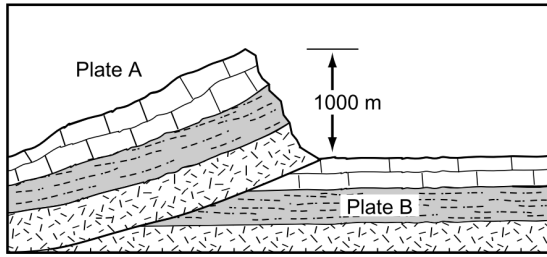
Superposition Younger sedimentary rock layers are generally found on top of older rock layers.

Cross-cutting Faults and igneous intrusions are younger than the rock they cut through.

Unconformities An eroded surface that separates older rocks below from younger rocks above.



8.



cross section view

How was the mountain shown above *most likely* formed?

- (A) Plates A and B are moving towards each other.
- (B) Plates A and B are moving apart from each other.
- (C) Plate A is moving away and Plate B is stationary.
- (D) Plate A is stationary and Plate B is moving away.

9. Which of the following *best* describes Earth's tectonic plates?

- (A) They move away from each other at the equator.
- (B) They move because of convection currents in the mantle.
- (C) They collide at midocean ridges.
- (D) They form at subduction zones.

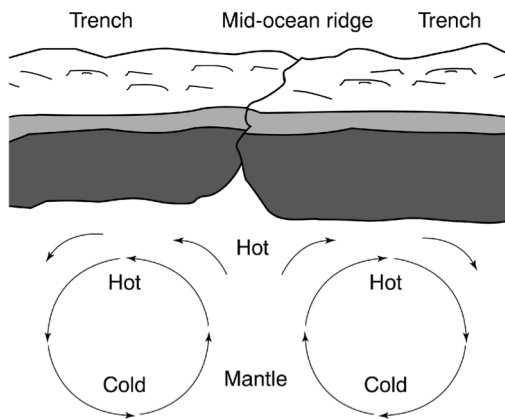
10. Which of the following is *most likely* to cause the biggest change to a land surface in the shortest amount of time?

- (A) A lightning storm
- (B) A gust of wind
- (C) A major earthquake
- (D) A rapidly flowing stream

11. An earthquake occurs when the tectonic plates below Earth's surface suddenly shift. These shifts of the tectonic plates are caused by

- (A) movements in Earth's core.
- (B) movements in Earth's mantle.
- (C) deposition of sediments.
- (D) eruption of volcanoes.

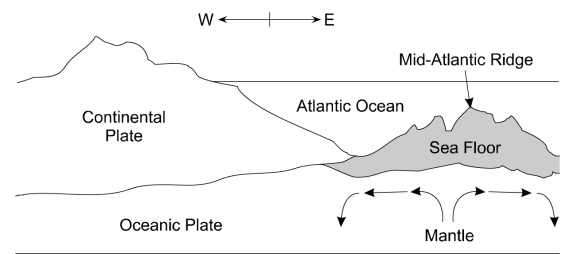
12. Use the diagram below to answer the following question(s).



Based on the diagram, which process explains why less dense, hot magma rises to the surface to displace more dense, cooler magma?

- (A) conduction (B) diffusion
(C) radiation (D) convection

13. Use the diagram below to answer the following question.



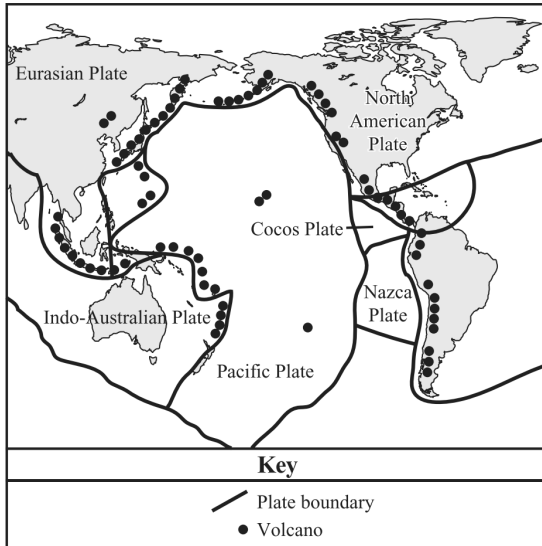
On the Atlantic Ocean floor, there is a long ridge of underwater mountains caused by volcanic eruptions. New volcanoes keep erupting, and new mountains keep forming. Why is this happening?

- (A) A new continent is forming.
(B) The ocean floor is spreading.
(C) Earth's center is becoming hotter.
(D) Crustal plates are colliding.

14. An earthquake is caused by sudden shifts in which of the following layers of Earth?

- (A) outer core (B) crust
(C) inner core (D) mesosphere

15. On the map below, dark circles indicate the positions of volcanoes in the “Ring of Fire” in and around the Pacific Ocean. Dark lines indicate tectonic plate boundaries of Earth’s crust.



Map showing positions of volcanoes in the “Ring of Fire” in and around the Pacific Ocean. According to this map, which of the following describes where volcanoes are *most likely* to form in the Ring of Fire?

- (A) Volcanoes form in the middle of a tectonic plate.
- (B) Volcanoes form below the surface of tectonic plates.
- (C) Volcanoes form where tectonic plates meet other plates.
- (D) Volcanoes form where earthquakes are least likely to occur.

16. Seafloor spreading provides evidence of which of the following Earth processes?

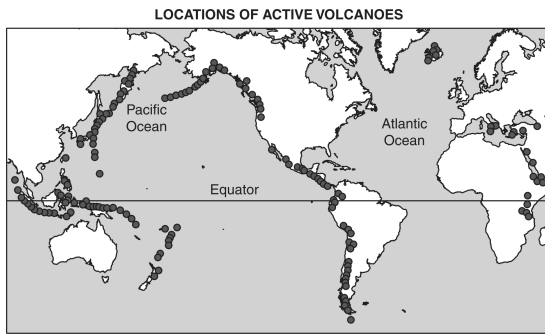
- (A) erosion of coastlines
- (B) weathering of mountains
- (C) movement of crustal plates
- (D) formation of sedimentary rocks

17. Earthquakes and volcanic eruptions occur both on land and in water.

Earthquakes and volcanic eruptions *most often* occur

- (A) near plate boundaries
- (B) on large pieces of land
- (C) in large bodies of water
- (D) in regions near the equator

18. The map below shows areas with active volcanoes.



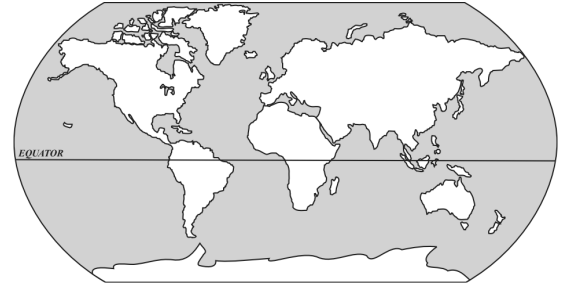
KEY

● = Active volcano

Where are *most* of the active volcanoes located?

- (A) along the equator
- (B) in the middle of the oceans
- (C) on tectonic plate boundaries
- (D) at the center of the continents

- 19.



This map shows the continents as they appear on Earth's surface today. It would be correct to say that in another 50 years the continents will

- (A) have moved to entirely new positions.
 - (B) be in almost the same positions as they are in today.
 - (C) have joined to become one large continent.
 - (D) be moving much faster than they are today.
20. The best evidence that the continents were once connected is that they have matching
- (A) weather, fossils, and rock types.
 - (B) rock types, fossils, and coastlines.
 - (C) coastlines, weather, and rock types.
 - (D) coastlines, weather, and fossils.

21. Which of these occurs when Earth's crust slips at a fault line?

- (A) Tornadoes
- (B) Earthquakes
- (C) Snowstorms
- (D) Water erosion

22. The San Andreas Fault is a transform fault that is located at the border of the North American Plate and the Pacific Plate.



What would *most likely* form along this fault if it were a convergent fault rather than a transform fault?

- (A) Rivers
- (B) Mountains
- (C) Rift valleys
- (D) Island chains

23. Which of these describes the outcome of the collision between oceanic and continental crust?

- (A) The two portions of crust will stop moving.
- (B) The continental crust will subduct beneath the oceanic crust.
- (C) The two portions of crust will slide past one another, side by side.
- (D) The oceanic crust will subduct beneath the continental crust.

24. Which of these describes a cause of lithospheric plate movement across the surface of Earth?

- (A) The plates are driven by bubbles from the boiling liquid of the asthenosphere.
- (B) The plates float on dense liquid material of the asthenosphere and are moved by tidal forces.
- (C) The plates are driven across the surface by convection currents within the plastic rock of the asthenosphere.
- (D) The plates move because they are attached to the solid rock of the asthenosphere and move with that rock.

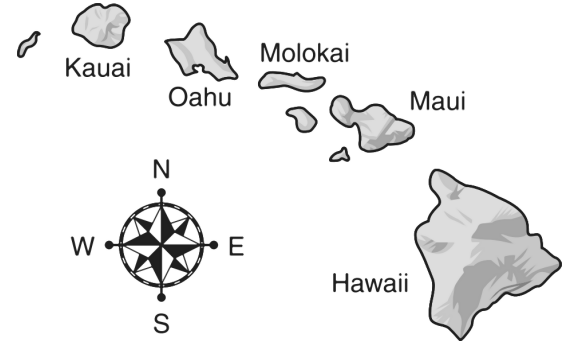
25. Which of these describes a divergent boundary?

- (A) Two continental plates moving away from each other, forming a rift valley
- (B) Two oceanic plates rubbing against each other, forming a midocean ridge
- (C) Two continental plates colliding, forming a mountain range
- (D) Two oceanic plates colliding, forming a volcanic arc

26. The Mid-Atlantic Ridge exists between the African and South American geologic plates. Which process *most often* occurs at the Mid-Atlantic Ridge?

- (A) destruction of underwater mountains
- (B) creation of new continents
- (C) subduction of geologic plates
- (D) spreading of sea floor

27. The Hawaiian Islands are younger on the eastern end than on the western end of the chain.



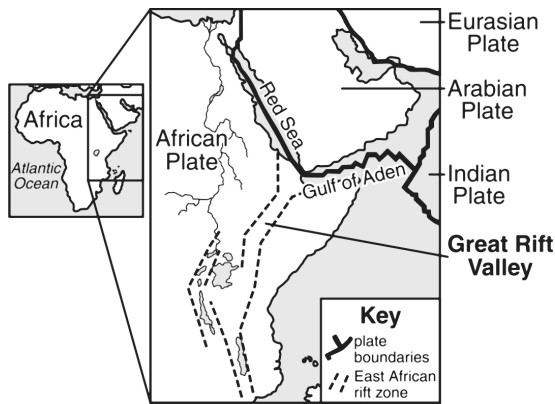
What is causing the age differences among the islands?

- (A) Two crustal plates are colliding.
- (B) A divergent boundary exists in the ocean floor.
- (C) An ocean plate is moving southeast across a hot spot.
- (D) An ocean plate is moving northwest across a hot spot.

28. New crust is being produced at a mid-ocean ridge. How does this affect Earth's crust?

- (A) The total amount of crust is always increasing.
- (B) The new crust is denser than older crust.
- (C) The total amount of crust is always decreasing.
- (D) The older crust is recycled at subduction zones.

29. The map below shows the location of the Great Rift Valley in East Africa.



The Great Rift Valley started forming millions of years ago. It slowly continues to deepen and widen, causing many volcanic eruptions and earthquakes in the area.

In a million years, what is the *most likely* geologic feature that will have formed where the Great Rift Valley is now located?

- (A) an inland sea
- (B) a mountain range
- (C) a new continent
- (D) a new forest

30. Most scientists believe that Earth's crust is composed of plates. There are two kinds of crust. **Oceanic crust** is more dense, on average, than **continental crust**. Accordingly, what would most likely happen if a plate of oceanic crust and a plate of continental crust collided?

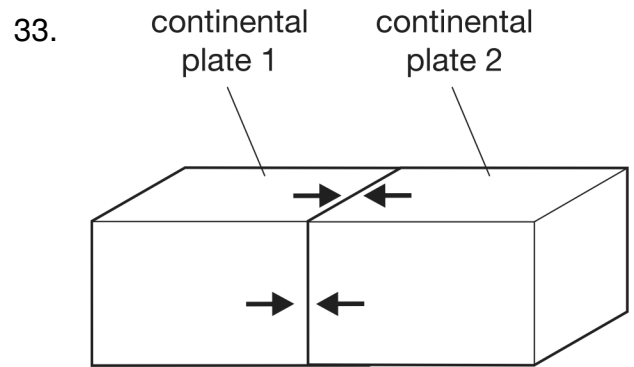
- (A) The oceanic crust would sink below the continental crust.
- (B) The oceanic crust would ride above the continental crust.
- (C) The continental crust would sink below the oceanic crust.
- (D) The continental crust would become thinner than the oceanic crust.

31. The early development of the theory of plate tectonics was supported by which of these observations?

- (A) matching fossils on the continents of Africa and South America
- (B) glacier deposits far from existing continental glaciers
- (C) thick sediment layers at the mouths of rivers
- (D) sudden volcanic activity of long-dormant volcanoes

32. Alfred Wegner's Theory of Continental Drift was not well accepted because he couldn't say what force could be big enough to move continents. Current theories explain this movement with

- (A) subduction zones at continental margins.
- (B) hot spots forming under continents.
- (C) magnetic reversals of the north and south poles.
- (D) convection currents in the mantle.



What is the most likely result of the movement of these two continental plates?

- (A) the formation of mountains because the plates will fold and crumple
- (B) the formation of a rift valley because the plates will rebound after colliding
- (C) the formation of an island because the plates are moving past one another
- (D) the formation of hot spots because the plates are generating heat where the plates collide

6.E.2.2 Plate Tectonics, Earthquakes and Volcanoes 05/12/2014

- | | | | |
|----------------|---|----------------|---|
| 1.
Answer: | B | 21.
Answer: | B |
| 2.
Answer: | B | 22.
Answer: | B |
| 3.
Answer: | C | 23.
Answer: | D |
| 4.
Answer: | B | 24.
Answer: | C |
| 5.
Answer: | | 25.
Answer: | A |
| 6.
Answer: | | 26.
Answer: | D |
| 7.
Answer: | C | 27.
Answer: | D |
| 8.
Answer: | A | 28.
Answer: | D |
| 9.
Answer: | B | 29.
Answer: | A |
| 10.
Answer: | C | 30.
Answer: | A |
| 11.
Answer: | B | 31.
Answer: | A |
| 12.
Answer: | D | 32.
Answer: | D |
| 13.
Answer: | B | 33.
Answer: | A |
| 14.
Answer: | B | | |
| 15.
Answer: | C | | |
| 16.
Answer: | C | | |
| 17.
Answer: | A | | |
| 18.
Answer: | C | | |
| 19.
Answer: | B | | |
| 20.
Answer: | B | | |