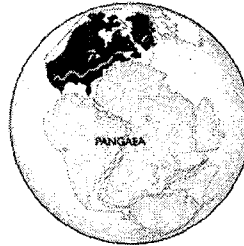


Plate Tectonics Worksheet (ESRT pg. 5)

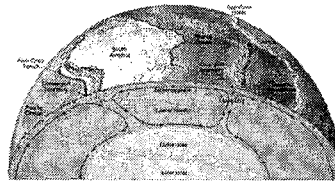
1. List three pieces of evidence of continental drift:

- a. "jigsaw fit" of continents
- b. matching bands of fossils, minerals, rock layers
- c. tropical plant fossils in Antarctica



2. What is believed to cause the plates to move?

Convection currents in the ASTHENOSPHERE or upper mantle

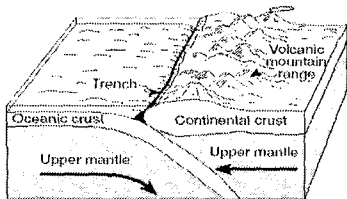


3. Describe the difference between a continental plate and an oceanic plate:

thicker
less dense
felsic
granite

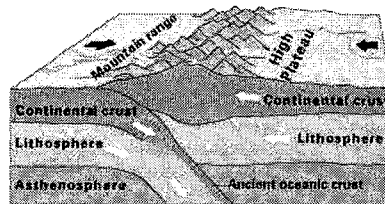
thinner
more dense
mafic
basalt

4. Write the name of each type of plate boundary and the main features that form.



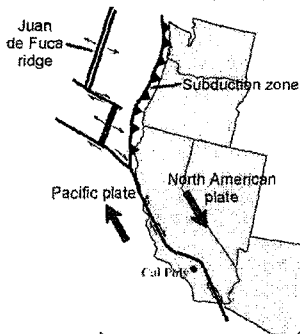
Name convergent

Key Features volcanic mountains
trench



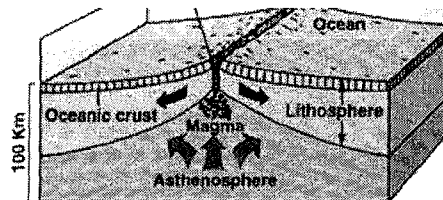
Name Convergent

Key Features mountains



Name transform

Key Features fault
earthquake



Name Divergent

Key Features mid-ocean
RIDGE

5. a. What type of boundary exists between the North American Plate and the Eurasian Plate? divergent

b. What feature is forming at that boundary? mid Atlantic Ridge

6. a. What type of boundary exists between the Philippine Plate and the Pacific Plate? convergent

b. What feature is forming at that boundary? trench

7. a. What type of boundary exists between the Nazca and South American Plates? convergent

b. What feature is forming at that boundary? mountains

8. a. What type of plate boundary exists on the west coast of the USA in California? transform

b. What feature is occurring at that boundary? San Andreas fault

9. a. What is so special about hot spots? magma rises to the surface from this location

b. Name four hot spots:

eastern island St. Helena Hawaii Galapagos Tasmanian
Canary Island Island Yellowstone Bouvet

10. a. When an ocean plate collides with a continental plate, which plate will go underneath the other? ocean plate

b. Why? more dense

11. a. What do we know about the age of the rocks at mid-ocean ridges?

youngest at ridge older further away (same age equal distance from ridge)

b. What happens to the age as you get farther from the ridges?

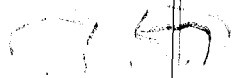
increases

12. Look at the Nazca and South American plate. Which plate is going underneath the other?

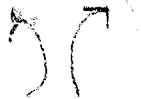
Nazca subducts under South American Plate

13. Draw arrows to show the motion occurring at the following boundaries:

a. Convergent



b. Divergent



c. Transform



14. What is the ring of fire?

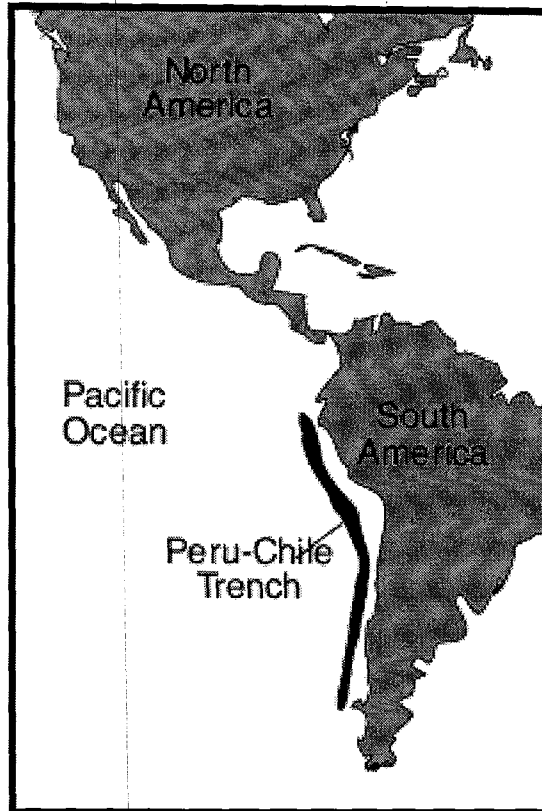
most tectonically active area around the Pacific Plate

Key

Name: _____

Plate Tectonics Regents Questions

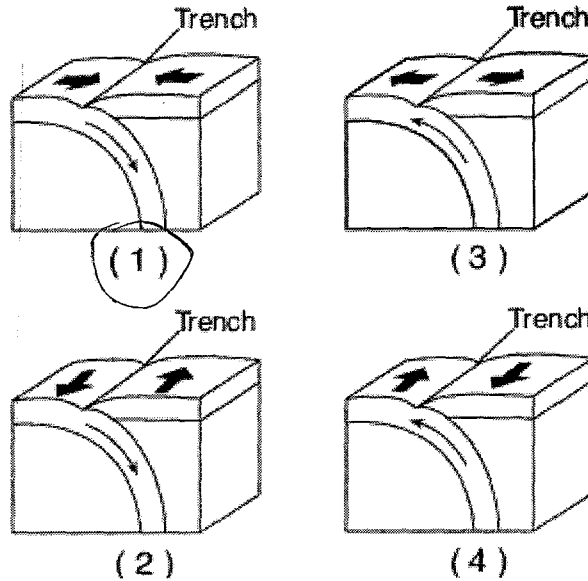
1. Base your answers to questions 1 through 3 on the map below, which shows the location of the Peru- Chile Trench.



1. The Peru-Chile Trench marks the boundary between the
- (1) Pacific Plate and the Antarctic Plate
 - (2) Nazca Plate and the South American Plate
 - (3) North American Plate and the Cocos Plate
 - (4) Caribbean Plate and the Scotia Plate

2. In which diagram do the arrows best represent the motions of Earth's crust at the Peru-Chile Trench?

Convergent



3. Which observation provides the best evidence of the pattern of crustal movement at the Peru-Chile Trench?

- (1) the direction of flow of warm ocean currents
- (2) the mineral composition of samples of mafic mantle rock
- (3) comparison of the rates of sediment deposition
- (4) the locations of shallow-focus and deep focus earthquakes

(subduction)

4. Compared to Earth's crust, Earth's core is believed to be

- (1) less dense, cooler, and composed of more iron
- (2) less dense, hotter, and composed of less iron
- (3) more dense, hotter, and composed of more iron
- (4) more dense, cooler, and composed of less iron

5. The Himalayan Mountains are located along a portion of the southern boundary of the Eurasian Plate. At the top of Mt. Everest (29,028 feet) in the Himalayan Mountains, climbers have found fossilized marine shells in the surface bedrock. From this observation, which statement is the best inference about the origin of the Himalayan Mountains?

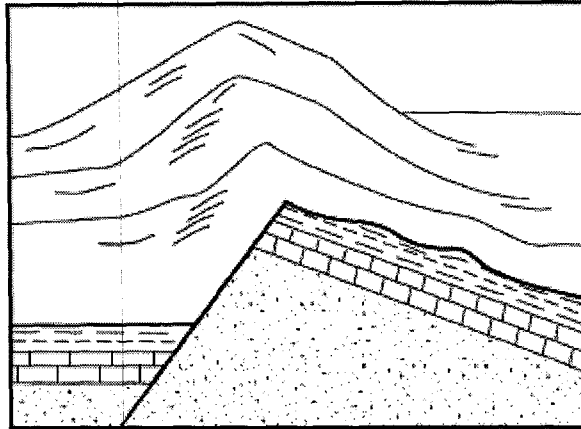
- (1) The Himalayan Mountains were formed by volcanic activity.
- (2) Sea level has been lowered more than 29,000 feet since the shells were fossilized.
- (3) The bedrock containing the fossil shells is part of an uplifted seafloor.
- (4) The Himalayan Mountains formed at a divergent plate boundary.

(convergence)

10. The temperature of rock at location *A* is approximately

- (1) 600°C
- (2) 1,000°C
- (3) 2,600°C
- (4) 3,000°C

11. 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

12. Mid-ocean ridges (rifts) normally form where tectonic plates are

- (1) converging
- (2) diverging
- (3) stationary
- (4) sliding past each other

13. The motion of the convection currents in the mantle beneath the Atlantic Ocean appears to be mainly making this ocean basin

- (1) deeper
- (2) shallower
- (3) wider
- (4) narrower

13. According to the diagram, the deep trench along the west coast of South America is caused by movement of the oceanic crust that is

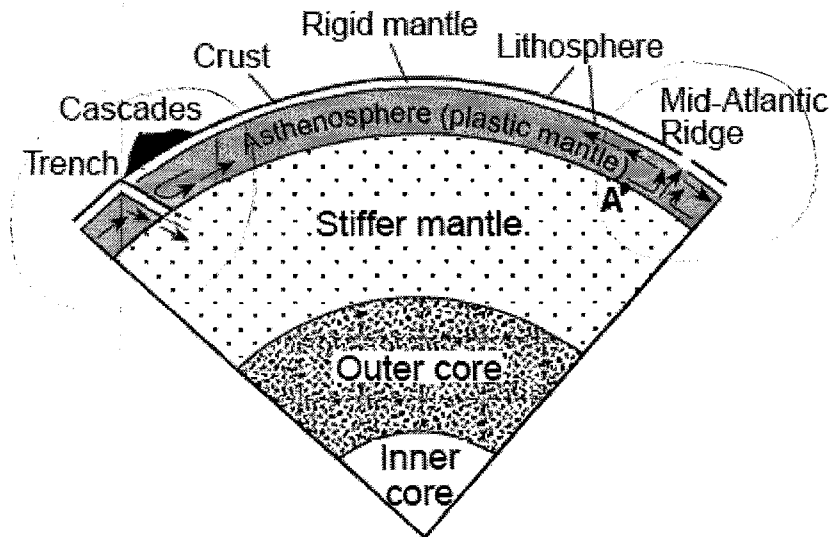
- (1) sinking beneath the continental crust
- (2) uplifting over the continental crust
- (3) sinking at the Mid-Atlantic ridge
- (4) colliding with the Atlantic oceanic crust

6. Earth's outer core is best inferred to be
- (1) liquid, with an average density of approximately 4 g/cm³
 - (2) liquid, with an average density of approximately 11 g/cm³
 - (3) solid, with an average density of approximately 4 g/cm³
 - (4) solid, with an average density of approximately 11 g/cm³

7. Compared to the thickness and density of the continental crust of South America, the oceanic crust of the Pacific floor is
- (1) thinner and less dense
 - (2) thinner and more dense
 - (3) thicker and less dense
 - (4) thicker and more dense

8. Mid-ocean ridges (rifts) normally form where tectonic plates are
- (1) converging
 - (2) diverging
 - (3) stationary
 - (4) sliding past each other

Base your answers to questions 9 and 10 on the diagram below, which shows a portion of Earth's interior. Point A is a location on the interface between layers.



(Not drawn to scale)

9. The arrows shown in the asthenosphere represent the inferred slow circulation of the plastic mantle by a process called
- (1) insolation
 - (2) convection
 - (3) conduction
 - (4) radiation