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Violent Volcanic Vents: What Lies Beneath 8th Grade Earth Science

Calculate tectonic trajectories and analyze seismic stress to predict where the next major crustal shift will likely occur.

1. The Juan de Fuca Plate is currently being forced beneath the North American Plate. Which characteristic landform transition is the result of this specific subduction process?

- A. The formation of a linear rift valley
- B. The creation of a continental volcanic arc
- C. The development of a mid-ocean ridge
- D. The emergence of a transform fault system

2. To determine the exact location of an earthquake's epicenter, seismologists must analyze the arrival time difference between ____ waves and S-waves from at least three different stations.

- A. Surface
- B. Love
- C. P (Primary)
- D. Rayleigh

3. Deep-focus earthquakes are more likely to occur at divergent boundaries than at convergent subduction zones.

- A. True
- B. False

4. Which of the following describes the 'Elastic Rebound Theory' used to explain the cause of earthquakes?

- A. Plates snap back to their original shape after breaking along a fault
- B. Magma chambers expand until the crust stretches thin and breaks
- C. The core cools down, causing the crust to shrink and crack
- D. Convection currents push plates into one another at a constant speed

5. The Aleutian Islands in Alaska were formed by an oceanic-oceanic convergent boundary, which typically creates a ____.

- A. Rift zone
- B. Hotspot track
- C. Volcanic island arc
- D. Coastal plain

6. A stratovolcano (composite volcano) like Mount Pinatubo is characterized by explosive eruptions. This is primarily due to magma that is ____.

- A. Low in silica and high in temperature

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- B. High in iron and low in gas content
- C. Low in viscosity and high in basalt content
- D. High in silica and high in gas content

7. The Moment Magnitude Scale is considered more accurate than the Richter Scale for measuring very large, distant earthquakes.

- A. True
- B. False

8. A ____ is a fast-moving, lethal flow of hot ash, gas, and rock fragments that can collapse down the side of a volcano during an eruption.

- A. Lahar
- B. Pahoehoe flow
- C. Pyroclastic flow
- D. Fissure eruption

9. If you are studying a map showing the age of the seafloor, where would you expect to find the oldest oceanic crust?

- A. Directly on top of a mid-ocean ridge
- B. At the furthest point away from a spreading center, near a trench
- C. In the center of a continental rift valley
- D. Equally distributed across the entire ocean floor

10. Tsunamis are caused by the vertical displacement of the seafloor, usually during a megathrust earthquake at a subduction zone.

- A. True
- B. False