Exam 1

- Due No due date
- Points 100
- Questions 50
- Available Feb 12 at 8am - Feb 12 at 10pm 14 hours
- Time Limit 60 Minutes

Instructions

This exam is based on lectures 1-4 and chapters 1-3

- Time limit: 60 minutes
- The timer continues even if you exit the quiz
- One attempt
- Open book/note

This quiz was locked Feb 12 at 10pm.

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	60 minutes	97.33 out of 100

Score for this quiz: 97.33 out of 100
Submitted Feb 12 at 12:19pm
This attempt took 60 minutes.

Question 1
2 / 2 pts

5 large earthquakes have affected a coastal town over the past 55 years. What is the probability of a large earthquake occurring this year? Enter probability as a decimal, not a percent.

Correct!

0.0909

0.09 (with margin: 0.01)

Question 2
2 / 2 pts

An earthquake is an example of a rapid-onset disaster.

Correct!

True

False

Question 3
2 / 2 pts

In the United States, which type of disaster has had the largest economic impact?

Wildfires

Severe Storms

Droughts

Correct!

Tropical cyclones

Earthquakes

Question 4
1.33 / 2 pts

Which of the following are examples of rapid-onset disasters? (select all that apply)

Hurricane

Correct Answer

Lightning Strike

Correct!

Earthquake

Drought

Correct!

Flash Flooding

Thunderstorms

Question 5
2 / 2 pts

Anthropogenic hazards are related to which one of the following examples?

hurricanes or other types of storms

meteorite impacts

volcanic eruptions

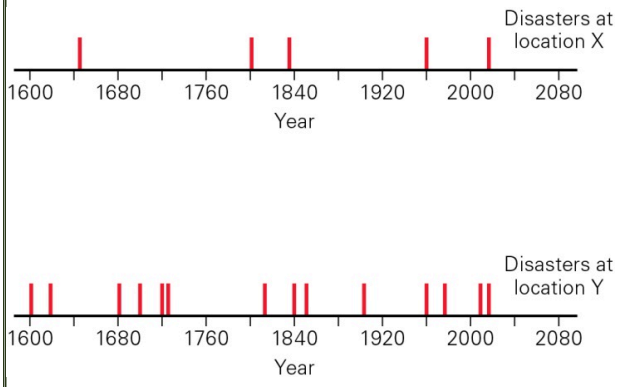
tsunamis as a result of earthquakes

Correct!

pollution of the environment from agricultural activities

Question 6
2 / 2 pts

The figure below shows the recurrence interval for a natural disaster at two locations X and Y . Which location would most likely experience a natural disaster in the year 2080?



Neither location X nor Y could experience a natural disaster in the year 2080.

Location X could experience a natural disaster in the year 2080.

Both X and Y could experience a natural disaster in the year 2080.

Correct!

Location Y could experience a natural disaster in the year 2080.

The figures are inconclusive; no determination is possible.

Question 7
2 / 2 pts

Modern technology has allowed accurate forecasting of weather that is quite reliable, especially on a short-term basis. Modern forecasting efforts rely on

Correct!

real-time observations in meteorological observations.

long-term trends in meteorological observations.

the seasonal likelihood of types of weather events.

calculated probabilities of types of weather events.

calculated recurrence intervals for types of weather events.

Question 8
2 / 2 pts

Which of the following is an example of a tertiary disaster?

- triggering of landslides by an earthquake
- building collapse from an earthquake
- widespread fires ignited by an earthquake
- initiation of a tsunami following an earthquake

Correct!

- disruption of municipal government services following an earthquake

Question 9
2 / 2 pts

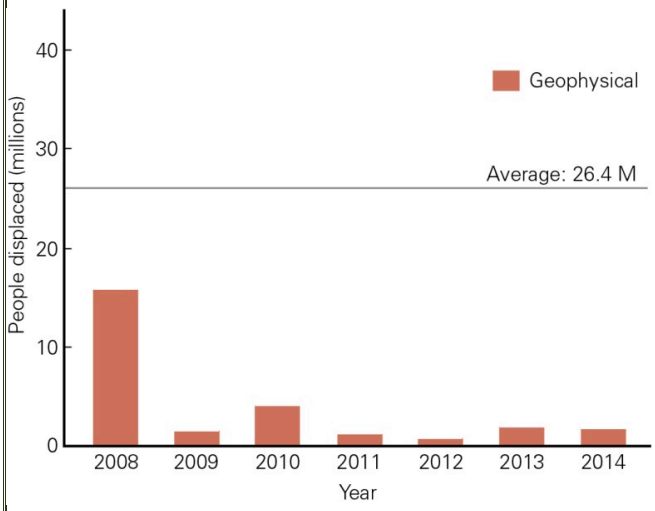
Long-term contamination of groundwater following an earthquake is an example of a _____.

Correct!

- tertiary disaster
- primary disaster
- secondary disaster

Question 10
2 / 2 pts

Are any trends apparent in the histogram below relating to the numbers of people displaced by geophysical natural disasters from 2008 to 2014?



- impossible to determine given the random occurrence of natural disasters
- Yes, analysis suggests that a decreasing number of people were displaced during the time represented.
- The data are inconclusive given the limited number of observations.

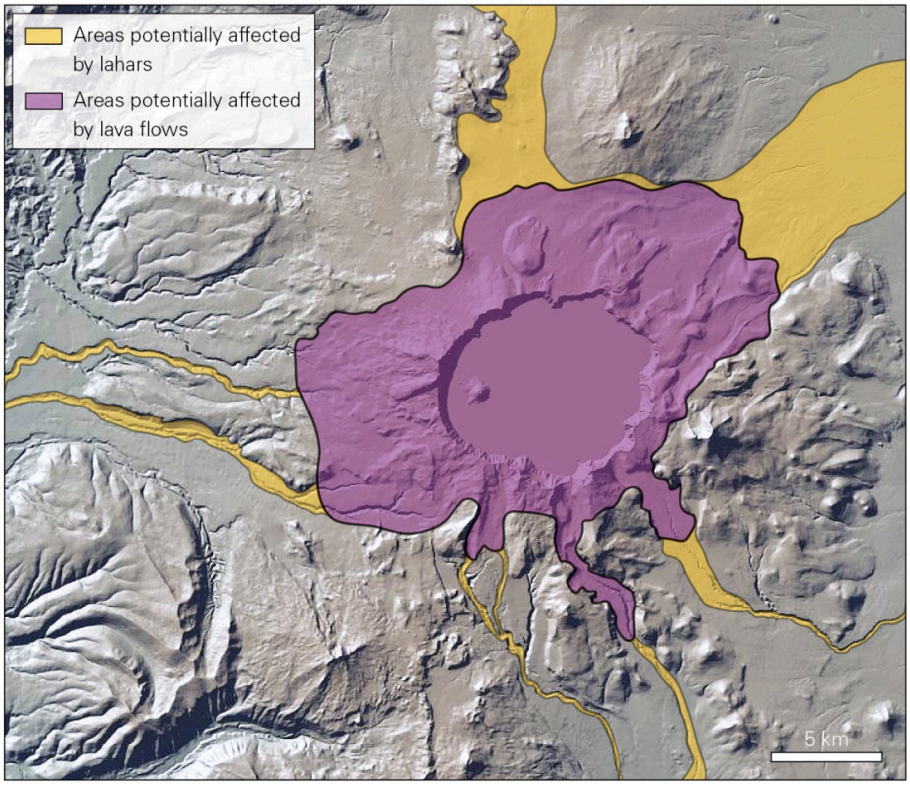
Correct!

- No, with the exception of 2008, the numbers are relatively similar over the years represented.

Question 11

2 / 2 pts

Referring to the figure below, the map indicated the potential hazard posed by two different volcanic processes. Which of the following is correct?



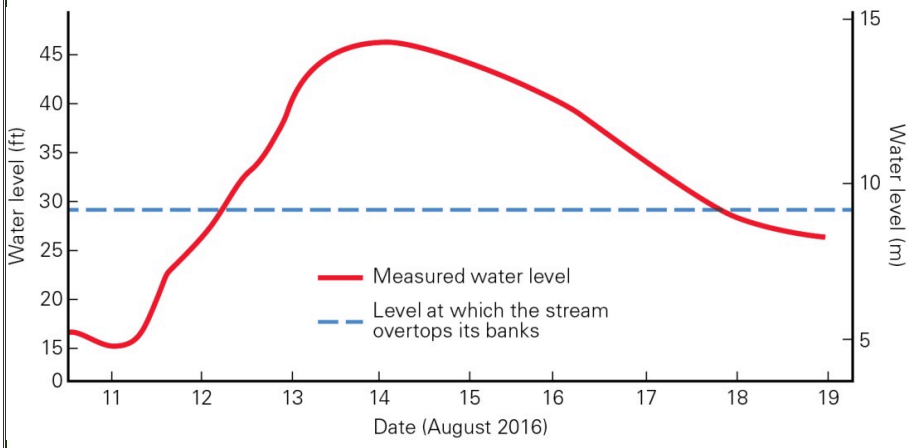
- The hazard from lava flows and lahars is equal in the areas affected.
- The hazard from lava flows and lahars cannot be evaluated by mapping.
- The hazard from lava flows extends to more distal areas than the lahars.

Correct!

- The hazard from lahars extends farther from the volcano than the lava flows.

Question 12
2 / 2 pts

The figure below illustrates an example of



Correct!

- a slow-onset disaster.
- a stealth disaster.
- a rapid-onset disaster.
- an instantaneous-onset disaster.

Question 13
2 / 2 pts

The risk a community faces from natural disasters may be reduced by

- increasing the preparedness of the community to hazards.
- improving forecasting to warn communities of potential hazards.
- decreasing the vulnerability of the community to hazards.

Correct!

- decreasing the exposure and/or vulnerability of the community to hazards.
- decreasing the exposure of the community to hazards.

Question 14
2 / 2 pts

What are the layers of the Earth based on physical properties? Starting from the surface (1) to the middle (5).

Correct!

1

Lithosphere

Correct!

2

Asthenosphere

Correct!

3

Lower Mantle

Correct!

4

Outer Core

Correct!

5

Inner Core

Question 15

2 / 2 pts

Tectonic plates move at a rate of

- 1–15 meters per year.

Correct!

- 1–15 centimeters per year.
- 1–15 millimeters per year.
- 1–15 kilometers per year.

Question 16

2 / 2 pts

What occurs at convergent margins?

- Old continental crust is being destroyed.

Correct!

- Old oceanic crust is being destroyed.

- New oceanic crust is being formed.
- Tectonic plates move away from one another.
- Tectonic plates slide past one another.

Question 17

2 / 2 pts

Which layer of the Earth makes up most of its volume?

Correct!

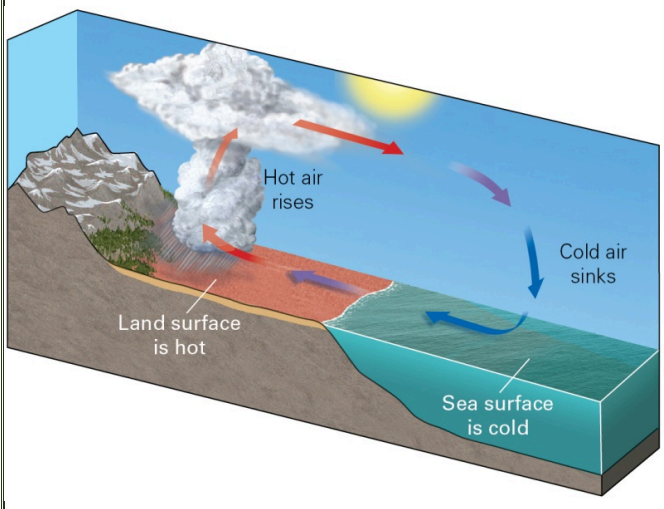
- Mantle

- Ocean
- Core
- Crust

Question 18

2 / 2 pts

What is the process illustrated in the figure below?



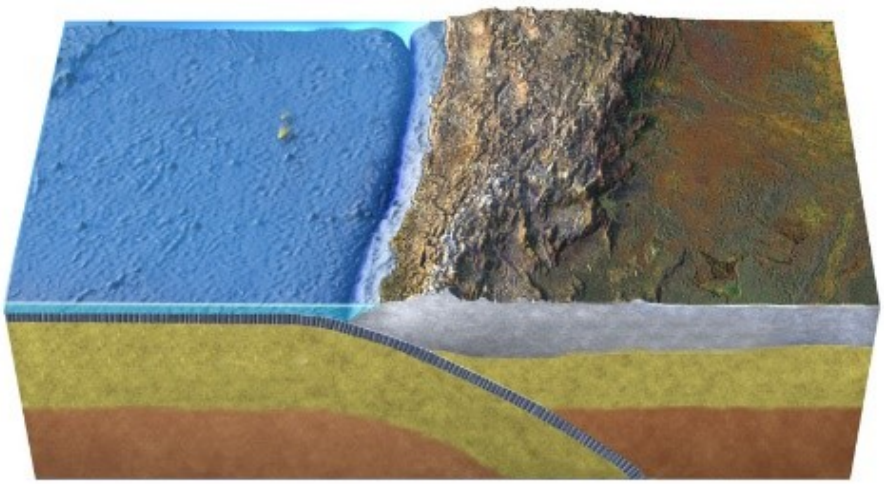
- conductive transfer of heat as a result of density contrasts in the atmosphere

Correct!

- convective transfer of heat as a result of density contrasts in the atmosphere
- the prevailing winds blowing offshore from a land body
- radiative transfer of heat as a result of density contrasts in the atmosphere
- storms over land masses producing wind shear at high elevations

Question 19
2 / 2 pts

Which way are the plates moving in this figure?



- away from each other
- horizontally sliding by one another
- toward each other at an angle
- there is no way to tell

Correct!

- directly toward each other

Question 20
2 / 2 pts

The asthenosphere is part of the _____.

- core

- lithosphere
- crust

Correct!

- mantle

Question 21
2 / 2 pts

The core, which is the densest portion of the Earth, is subdivided into an outer liquid and inner solid zone. Calculations suggest the composition is dominated by

Correct!

- iron.
- platinum.
- gold.
- lead.
- copper.

Question 22
0 / 2 pts

Mountains can be built by which of the following tectonic events?

- rifting at developing divergent boundaries

You Answered

- continental collision at convergent boundaries
- none of these
- subduction at convergent boundaries

Correct Answer

- all of these

Question 23
2 / 2 pts

The two most abundant gases comprising the atmosphere of the Earth are

- ozone and carbon dioxide.
- oxygen and carbon dioxide.
- oxygen and methane.

nitrogen and carbon dioxide.

Correct!

nitrogen and oxygen.

Question 24

2 / 2 pts

The islands of Japan and the Philippines are examples of _____.

mid-ocean ridge volcanoes

hotspot volcanoes

continental volcanic arcs

Correct!

volcanic island arcs

Question 25

2 / 2 pts

Which layer of the Earth is primarily composed of silicon and oxygen?

Correct!

Crust

Outer core

Mantle

Inner core

Asthenosphere

Question 26

2 / 2 pts

The main difference between the lithosphere and the asthenosphere is the _____.

asthenosphere flows less easily

asthenosphere has more continental crust

asthenosphere is cooler

asthenosphere has more oceanic crust

Correct!

asthenosphere is less rigid

Question 27
2 / 2 pts

What is the distribution of surface water on the Earth?

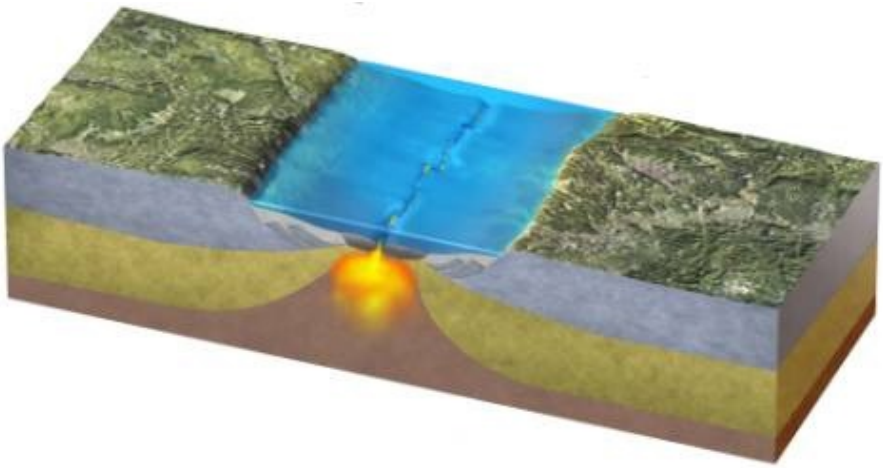
- 47% occurs as salty water in the oceans, and 53% occurs as freshwater on the land surface and groundwater in the subsurface.
- 63% occurs as salty water in the oceans, and 37% occurs as freshwater on the land surface and groundwater in the subsurface.
- 27% occurs as salty water in the oceans, and 73% occurs as freshwater on the land surface and groundwater in the subsurface.

Correct!

- 97% occurs as salty water in the oceans, and 3% occurs as freshwater on the land surface and groundwater in the subsurface.
- 77% occurs as salty water in the oceans, and 23% occurs as freshwater on the land surface and groundwater in the subsurface.

Question 28
2 / 2 pts

Which way are the plates moving in this figure?



- toward each other at an angle
- horizontally sliding by one another
- there is no way to tell

Correct!

- away from each other
- directly toward each other

Question 29
2 / 2 pts

Which of the following best explains how the early Earth separated into layers?

- Volcanic eruptions of magma from within the Earth created all of the layers.

Correct!

- Heavy elements sank toward the center and lighter elements floated toward the surface in a process called chemical differentiation.
- They formed as a result of planetary accretion, with the inner layers forming during the earliest part of Earth's formation.
- The center of the Earth cooled and solidified first, followed by the outer layers.

Question 30
2 / 2 pts

The flow of material in the _____ is responsible for Earth's magnetic field.

Correct!

- outer core
- mantle
- asthenosphere
- crust
- inner core

Question 31
2 / 2 pts

What type of stress created the fault in this image?

- Compressional stress

Correct!

- [x] Sheer stress

- [ ] Tensional stress

Question 32
2 / 2 pts

Divergent lithospheric plate boundaries exhibit two styles of faulting:

- [ ] normal and reverse faulting.
- [ ] reverse and normal faulting.
- [ ] reverse and strike-slip faulting.

Correct!

- [x] normal and strike-slip faulting.

Question 33
2 / 2 pts

Once a fault forms, what tends to resist repetitive or continual motion on that fault surface?

- [ ] electrostatic attraction
- [ ] lubrication

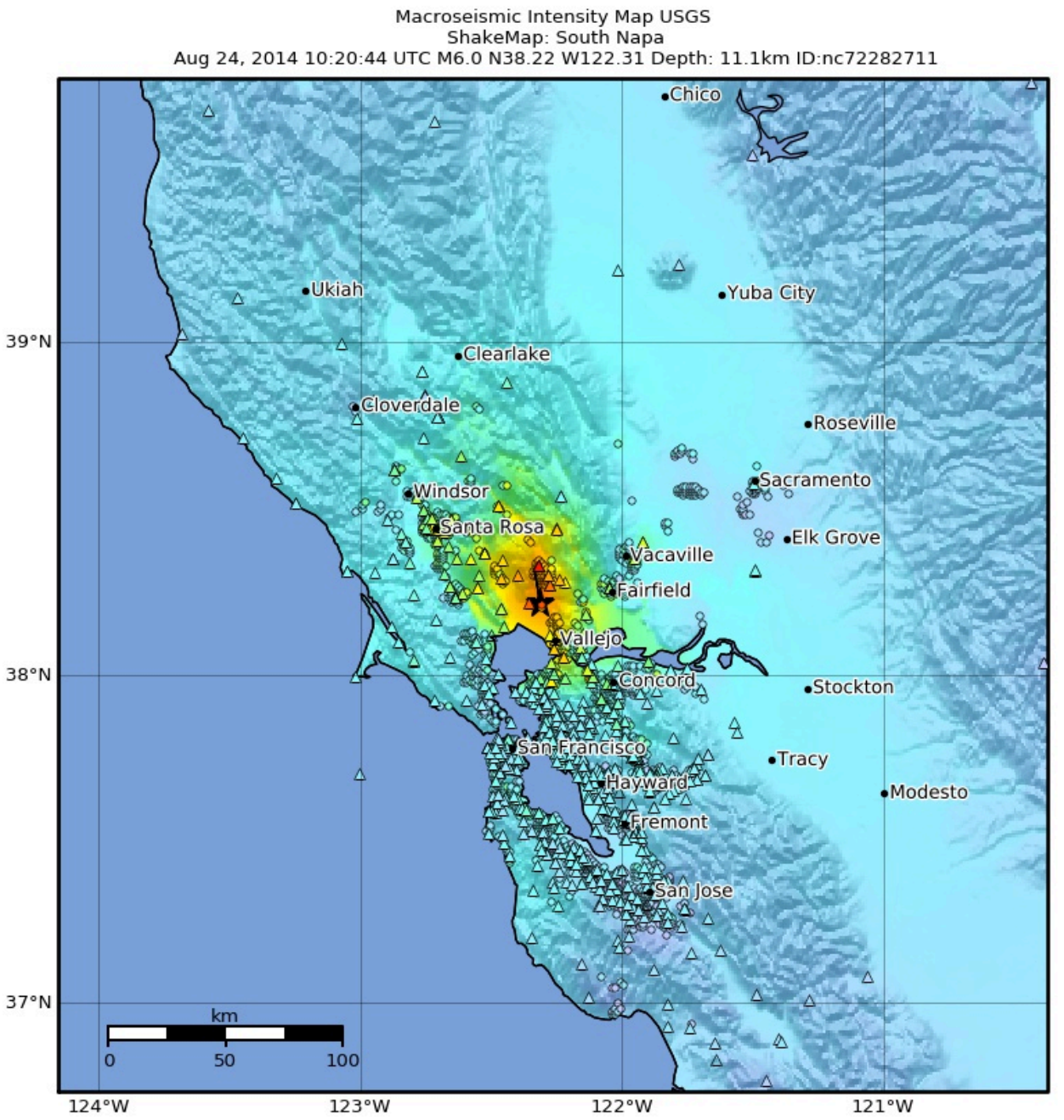
Correct!

- [x] friction

- [ ] cementation

Question 34
2 / 2 pts

Below is an intensity map from an earthquake near Nappa Valley California. Which city experienced the most intense shaking?



SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
DAMAGE	None	None	None	Very light	Light	Moderate	Moderate/heavy	Heavy	Very heavy
PGA(%g)	<0.0464	0.297	2.76	6.2	11.5	21.5	40.1	74.7	>139
PGV(cm/s)	<0.0215	0.135	1.41	4.65	9.64	20	41.4	85.8	>178
INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X+

Scale based on Worden et al. (2012) Version 2: Processed 2021-06-29T17:26:14Z

△ Seismic Instrument ○ Reported Intensity ★ Epicenter ▭ Rupture

- San Francisco
- Santa Rosa
- Fairfield

Sacramento

Correct!

Vallejo

Question 35

2 / 2 pts

You can determine how far away an earthquake occurred from a seismic station by measuring _____.

Correct!

the gap in time between the arrival of P-waves and S-waves

the up and down motion of S-waves

the magnitude and intensity of the seismic waves

the period of surface waves and velocity of P-waves.

Question 36

2 / 2 pts

The geologic subdiscipline of seismology studies

how seismic waves propagate through the Earth and at the Earth's surface.

why earthquakes occur in certain places.

Correct!

All of these.

the ways in which earthquakes may be compared to one another.

the geologic phenomena responsible for earthquakes.

Question 37

2 / 2 pts

A dip-slip fault is a fault where the movement is primarily _____.

both vertical and horizontal

horizontal

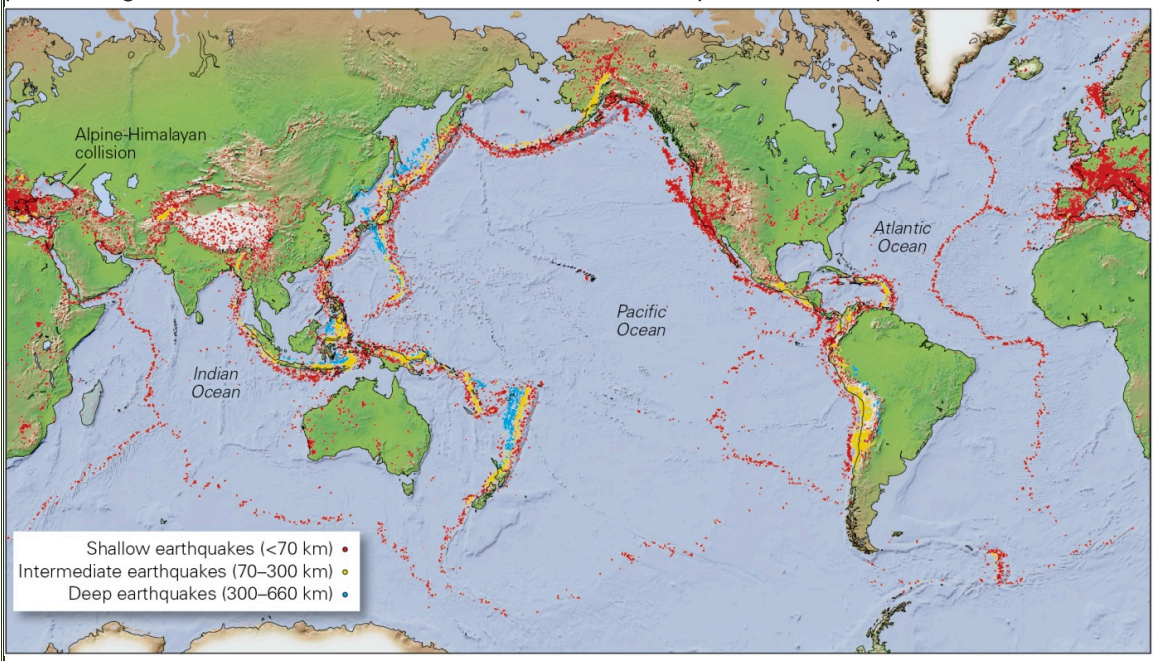
Correct!

vertical

Question 38

2 / 2 pts

As illustrated in the tectonic map of the Earth in the figure below, which tectonic plate setting is capable of producing shallow focus, intermediate focus, and deep focus earthquakes?



- divergent plate boundary settings
- intraplate rift settings
- transform plate boundary settings

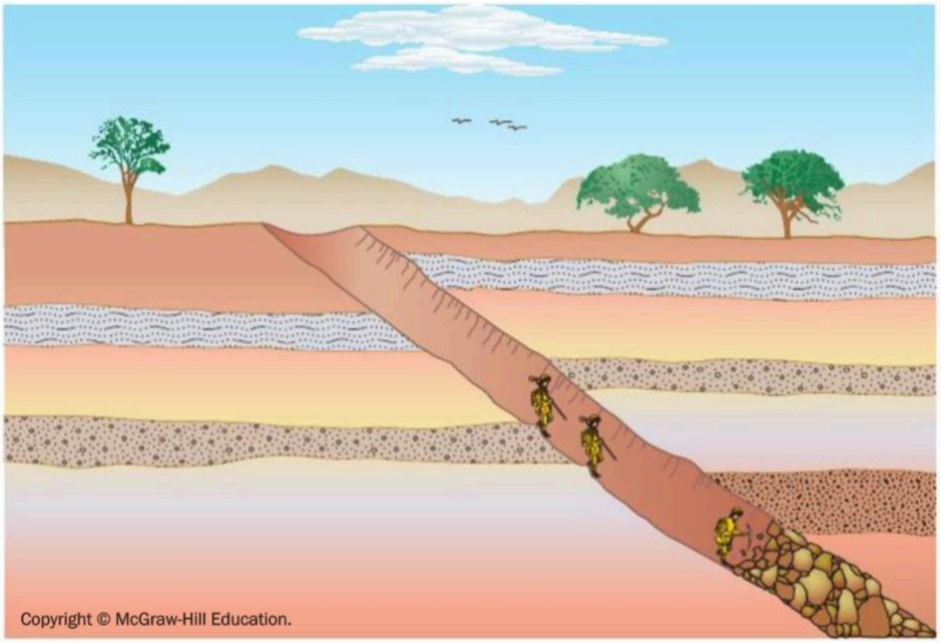
Correct!

- convergent plate boundary settings

Question 39

2 / 2 pts

The block above the fault line in this image is referred to as the _____.



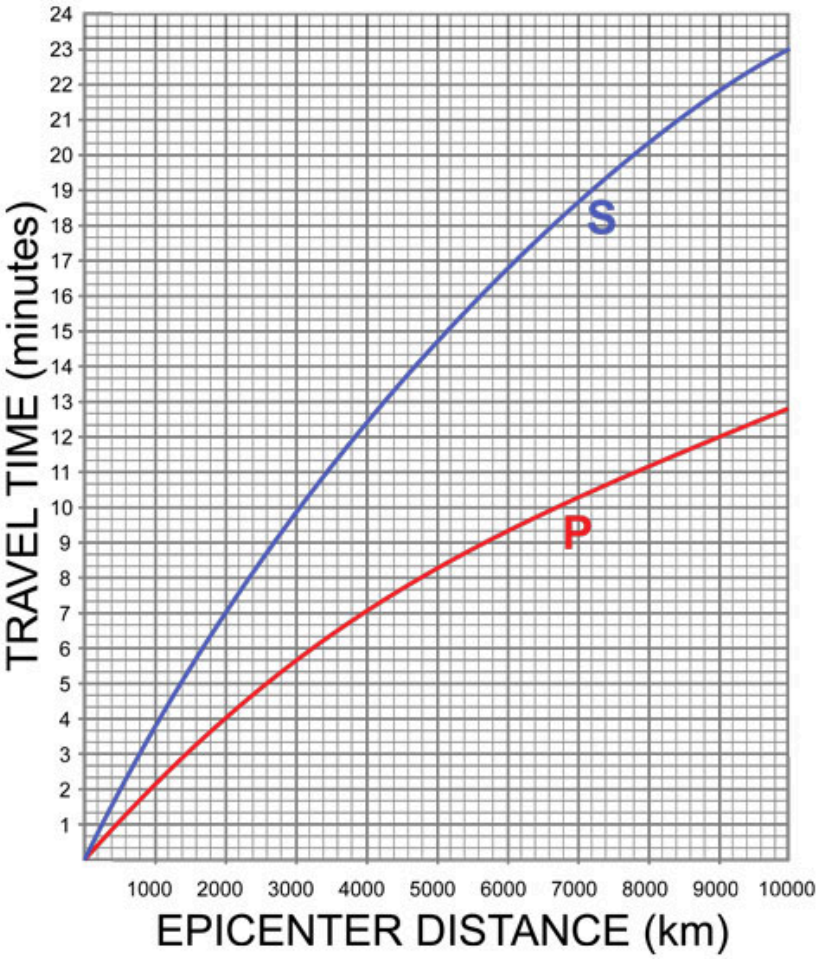
- floor block
- normal fault

Correct!

- hanging wall
- basement
- footwall

Question 40
2 / 2 pts

A seismic station records a travel time difference between P-wave arrival and S-wave arrival of 3 minutes. How far away was the earthquake epicenter from this location?



Correct!

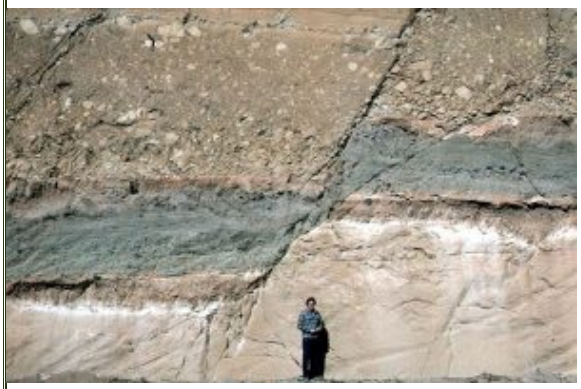
2,000

Between 1,800 and 2,200

Question 41

2 / 2 pts

Near what type of plate boundary would you expect to find the fault in this image?



- Convergent
- Transform

Correct!

- [x] Divergent

Question 42

2 / 2 pts

Which seismic waves typically cause the most damage?

- [ ] S-waves

Correct!

- [x] Surface waves

- [ ] P-waves

Question 43

2 / 2 pts

If a fault forms due to compressional stress, which way will the hanging wall move?

- [ ] Horizontal

Correct!

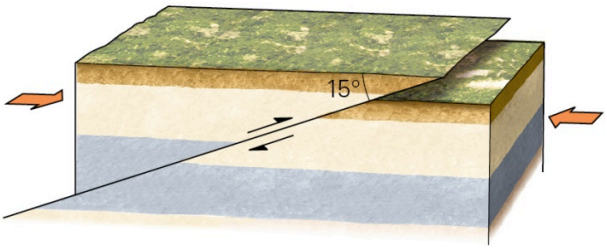
- [x] Up

- [ ] Down

Question 44

2 / 2 pts

In a thrust fault, as illustrated in the figure below, what type of stresses are present in the crust?



- [ ] Shear stresses: the crust is experiencing neither compression nor extension.

- [ ] Tensional stresses: the crust is experiencing stretching, promoting crustal extension.

Correct!

- [x] Compressional stresses: the crust is experiencing compression, promoting crustal shortening.

- [ ] None of these: stresses are not an important factor in faulting.

Question 45

2 / 2 pts

What is the minimum number of seismic stations needed to locate the epicenter of an earthquake?

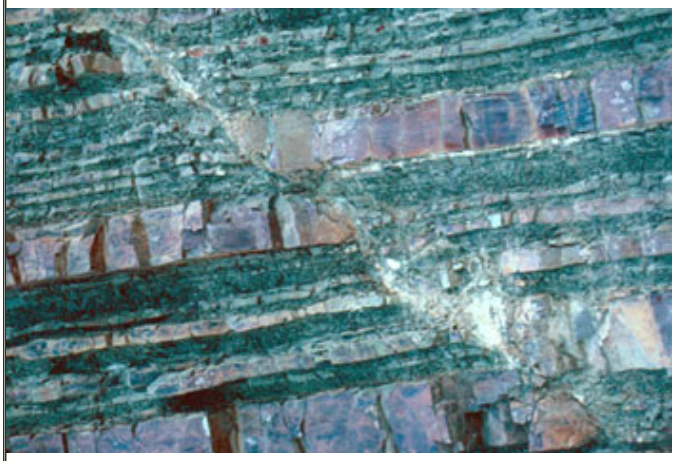
Correct!

- (selected) 3
- 2
- 4
- 5
- 1

Question 46

2 / 2 pts

Wha type of fault is shown in this outcrop image?



- Syncline

Correct!

- (selected) Reverse fault
- Normal fault
- Anticline
- Transform fault

Question 47

2 / 2 pts

Near what type of plate boundary would you expect to find the fault in this image?

- Divergent

Correct!

- Transform

- Convergent

Question 48

2 / 2 pts

What type of fault is shown in this image?

- Syncline
- Normal fault
- Reverse fault
- Anticline

Correct!

- Transform fault

Question 49
2 / 2 pts

In an earthquake, foreshocks and aftershocks

Correct!

- (selected) occur on the same or adjacent faults to the one experiencing the main shock, but are smaller in magnitude.
- occur on the same or adjacent faults to the one experiencing the main shock, and are of equal magnitude.
- occur on the same or adjacent fault as the one experiencing the main shock, but involve a different style of faulting to differentiate them from the main shock.
- occur on the same or adjacent faults to the one experiencing the main shock, but are larger in magnitude.

Question 50
2 / 2 pts

Why don't the rocks on either side of a fault simply slide past each other when stress is applied?

- The rocks must melt before they can slide smoothly.
- The stress must be applied in the correct direction.

Correct!

- (selected) Friction holds the rocks together.
- Gravity holds the sides together.

Quiz Score: 97.33 out of 100