

**Question 23**  
**Benchmark A**  
**Spring 2005**

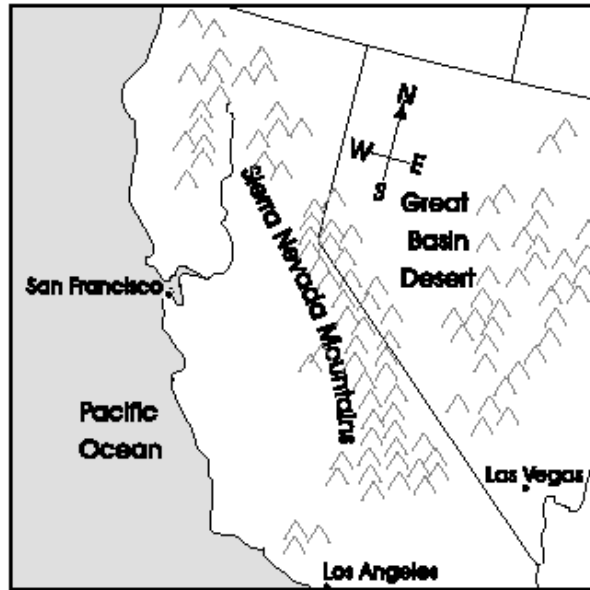
- . When examining the red shift of galaxies outside our own, every galaxy appears to be moving away from the observer. This observation supports the Big Bang Theory because it indicates that
- A. our galaxy is not moving.
  - B. the universe is expanding.
  - C. most galaxies have the same mass.
  - D. Earth is at the center of the universe.

**Question 10**  
**Benchmark B**  
**9<sup>th</sup> Practice Test**

In most areas of Ohio, the frost-free growing season is 150 to 180 days. Farms close to Lake Erie have a growing season closer to 200 days. One explanation of this fact is that

- A. crops grown around the lake are frost-resistant.
- B. industries around the lake prevent early freezes.
- C. irrigation water from the lake freezes at a lower temperature.
- D. heat given off by the lake extends the number of frost-free days.

**Question 27**  
**Benchmark B**  
**9<sup>th</sup> Practice Test**

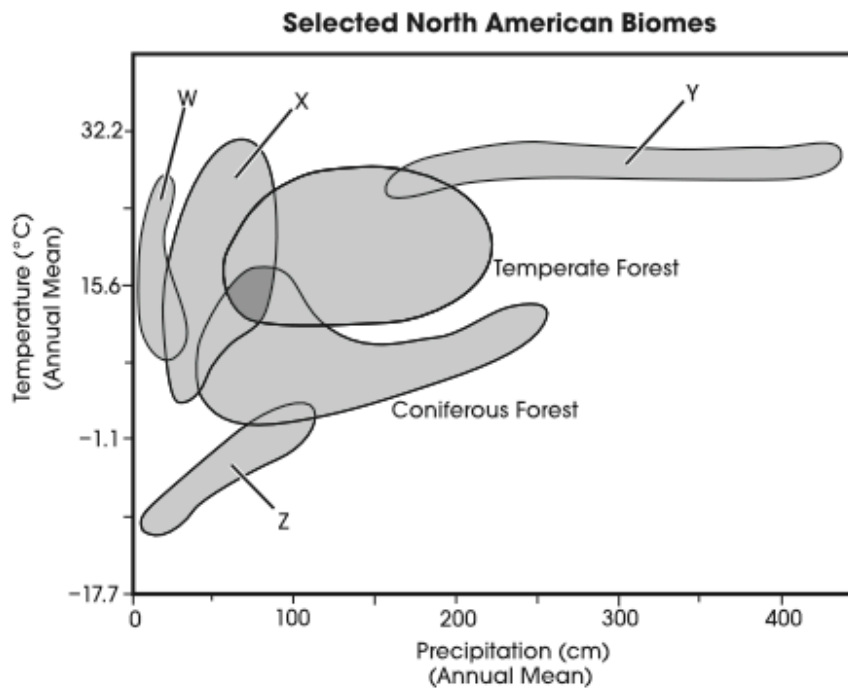


27. The interior of the western United States is arid to semi-arid because the western mountains
- A. produce large amounts of moisture.
  - B. block moisture coming from the west.
  - C. prevent snow from melting.
  - D. reflect solar heat drying the air.

**Question 15**  
**Benchmark B**  
**Spring 2005**

**Biomes**

The following graph shows the ranges of temperature and precipitation for six American biomes, two of which are identified by name.



Deserts are consistently the driest biomes in North America. They typically receive very little precipitation but have a wide variation in the mean annual temperature.

Which biome likely represents the deserts?

- A. W
- B. X
- C. Y
- D. Z

**Question 16**  
**Benchmark B**  
**Spring 2005**

Based on the graph, what is the primary difference between biomes W and X?

- A. mean number of species
- B. mean annual temperature
- C. mean annual precipitation
- D. mean number of days with sunshine

**Question 17**  
**Benchmark B**  
**Spring 2005**

Biome Z would likely be found in which of these locations?

- A. in a valley along the Pacific coast
- B. along a rocky shore in New England
- C. in the middle of the Midwestern plains
- D. above the tree line in the Rocky

**Question 18**  
**Benchmark B**  
**Spring 2005**

Locate biome W and the temperate forest on the graph. Based on the information provided, describe one similarity and one difference between the climates of these two biomes. Respond in the space provided in your **Answer Document**. (2 points)

**Question 19**  
**Benchmark B**  
**Spring 2005**

The tundra is the coldest of the biomes, having extremely low temperatures and little precipitation.

What other characteristics would be expected for this biome?

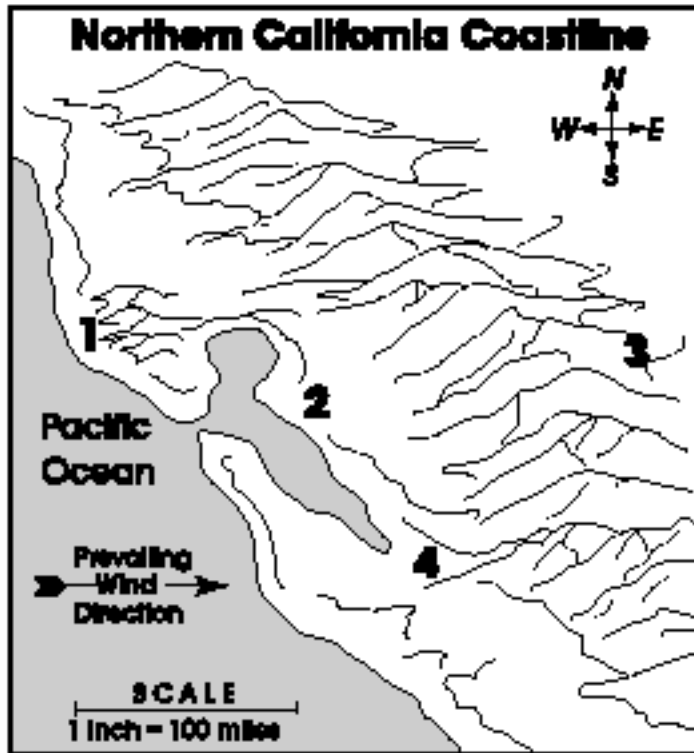
- A. low biotic diversity and sparse vegetation
- B. nutrient rich soil and a long growing season
- C. stable population numbers and high biotic diversity
- D. dense vegetation and large daily temperature fluctuations

**Question 20**  
**Benchmark B**  
**Spring 2005**

What type of energy from the oceans is responsible for weather patterns?

- A. electrical
- B. magnetic
- C. mechanical
- D. thermal

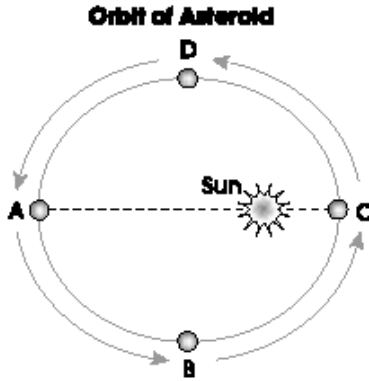
**Question 10**  
**Benchmark B**  
**9<sup>th</sup> Practice Test**



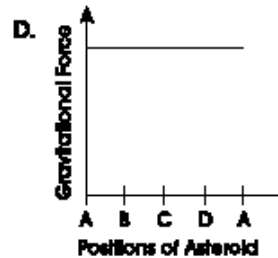
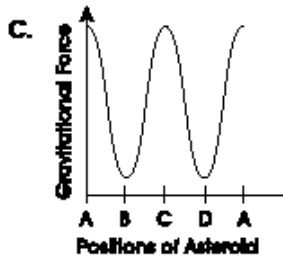
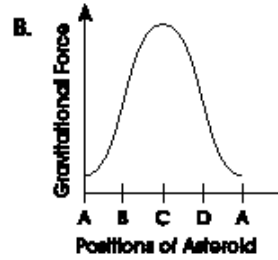
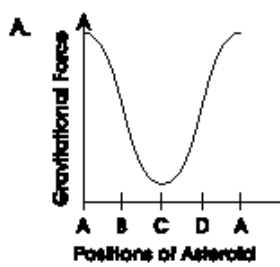
10. In which area would you expect incense cedar and madrone to dominate?
- A. 1
  - B. 2
  - C. 3
  - D. 4

**Question 15**  
**Benchmark C**  
**9<sup>th</sup> Practice Test**

15. Points A, B, C and D in the drawing below represent an asteroid's position during its orbit around the sun.



Which graph shows how the gravitational force between the sun and the asteroid varies with the asteroid's distance from the sun?



**Question 26**  
**Benchmark C**  
**Spring 2005**

. Our solar system is thought to have formed from a nebula of dust and gas. Most of this nebula condensed to form the sun.

What is primarily responsible for causing these materials to condense?

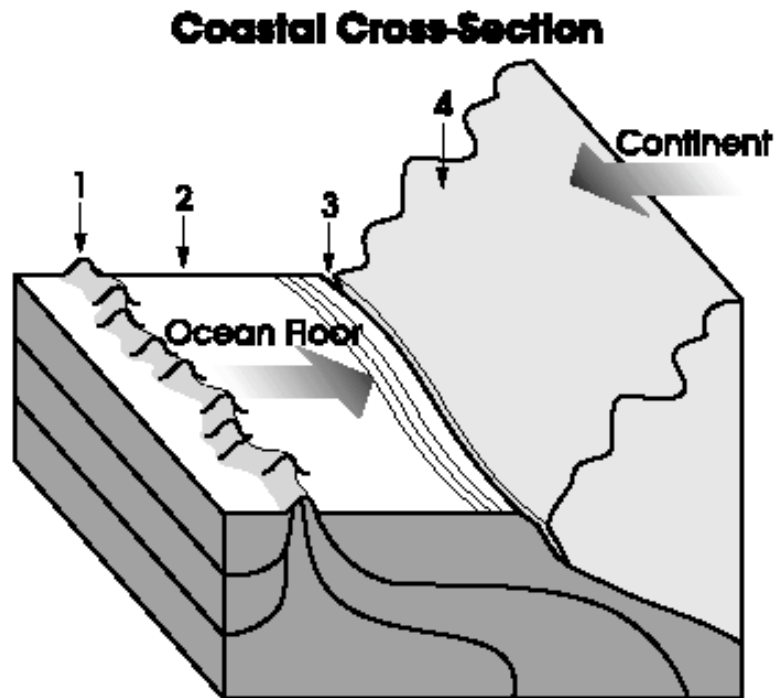
- A. electrical attraction between charged dust particles
- B. gravitational pull of nebula materials on each other
- C. heat released by nuclear fusion at the center of the nebula
- D. chemical reactions between hydrogen and other nebula gases

**Question 18**  
**Benchmark E**  
**9<sup>th</sup> Practice Test**

Earth's crust is divided into many crustal plates. Their activity is described as plate tectonics. List two effects of plate tectonics and explain how plate tectonics causes each effect. Respond in the space provided in your **Answer Document**.  
(4 points)

**Question 25**  
**Benchmark E**  
**9<sup>th</sup> Practice Test**

25. Which area of the diagram shows the subduction zone?

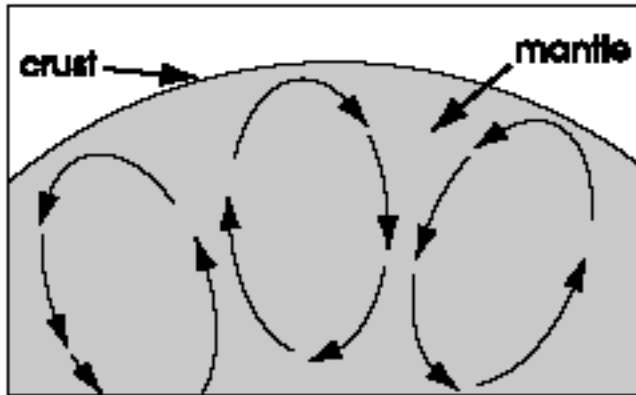


- A. 1
- B. 2
- C. 3
- D. 4

**Question 33**  
**Benchmark E**  
**9<sup>th</sup> Practice Test**

Use the picture to answer question 33.

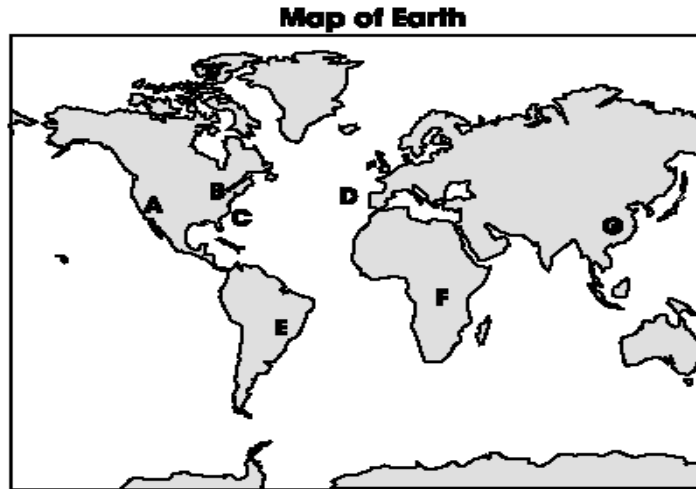
**Simplified Diagram of Earth's Mantle**



33. What is the process shown above by which molten material moves through Earth's mantle?
- A. radiation
  - B. convection
  - C. plate faulting
  - D. continental drift

**Question 38**  
**Benchmark E**  
**9<sup>th</sup> Practice Test**

38. The following map shows the position of Earth's continents today.

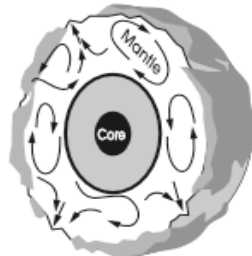


Which piece of evidence would provide the strongest support for the hypothesis that Earth's continents were once joined?

- A. Modern crops grown in region E can also be grown in region F.
- B. Fossilized sediments found in region A resemble those found in region B.
- C. Modern marine mammals found in location C are also found in location D.
- D. Fossilized land invertebrates found in location E are also found in location F.

**Question 1**  
**Benchmark E**  
**Spring 2005**

**Earth's Cross Section**



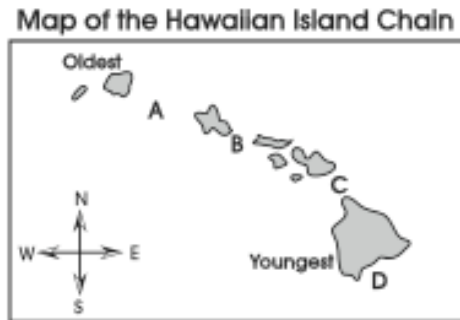
1. Scientists believe that forces in Earth's mantle move Earth's crustal plates.

What do the arrows in the diagram represent?

- A. ocean currents
- B. gravity
- C. convection currents
- D. wind patterns

**Question 22**  
**Benchmark E**  
**Spring 2005**

Use the map to answer question 22.



22. The Hawaiian Islands are riding on the Pacific Plate as it moves northwestward. They are being formed as the plate moves over a hot spot in the mantle.

Where is the next volcano likely to form?

- A. A
- B. B
- C. C
- D. D

**Question 20**  
**Benchmark F**  
**9<sup>th</sup> Practice Test**

The 19th-century hypothesis that sedimentary strata were laid down in chronological order had what immediate impact on geologic theory?

- A. It provided proof of continental drift.
- B. It provided calibration of data derived from radioactive decay.
- C. It caused geologists to reconsider estimates about Earth's age.
- D. It allowed geologists to better understand tectonic plate movement.

**Question 8**  
**Benchmark F**  
**Spring 2005**

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