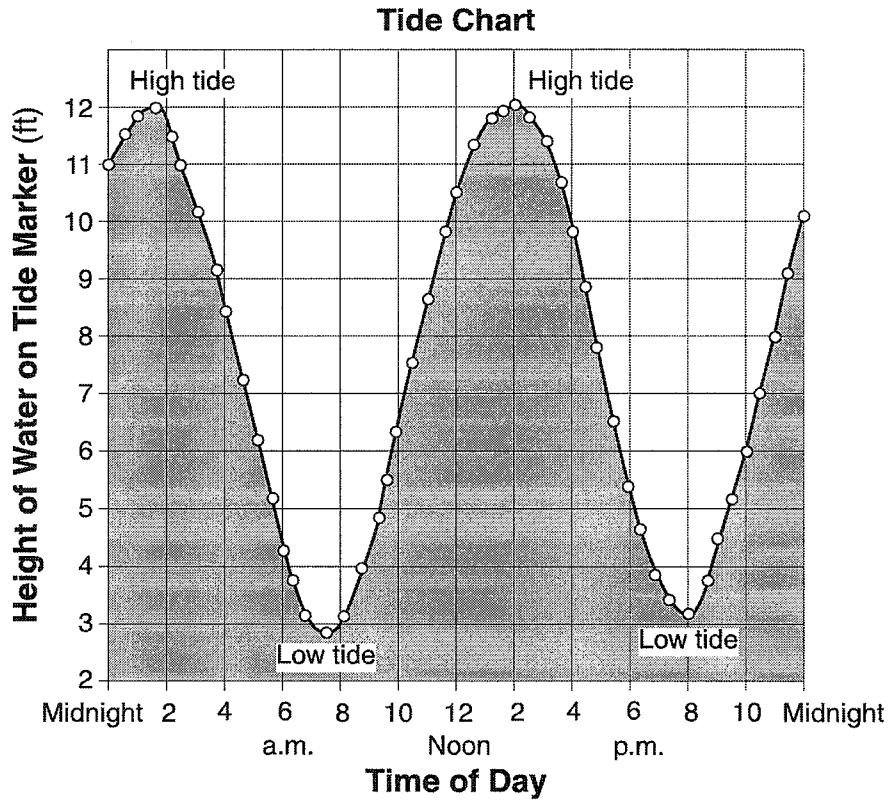


XC #4 Questions Part I

1 The graph below shows the water levels that result from tidal action over a 24-hour period.



What was the approximate height of the water on the tide marker at 6 p.m.?

- | | |
|------------|-------------|
| (1) 4.3 ft | (3) 8.5 ft |
| (2) 5.4 ft | (4) 11.2 ft |

2 Approximately how long does it take to cycle from one new Moon to the next new Moon?

- | | |
|------------|-------------|
| (1) a day | (3) a month |
| (2) a week | (4) a year |

3 If shell fragments are found in a rock sample, it is most likely that the rock formed

- (1) on a mountain slope
- (2) on a glacier
- (3) from magma
- (4) in shallow water

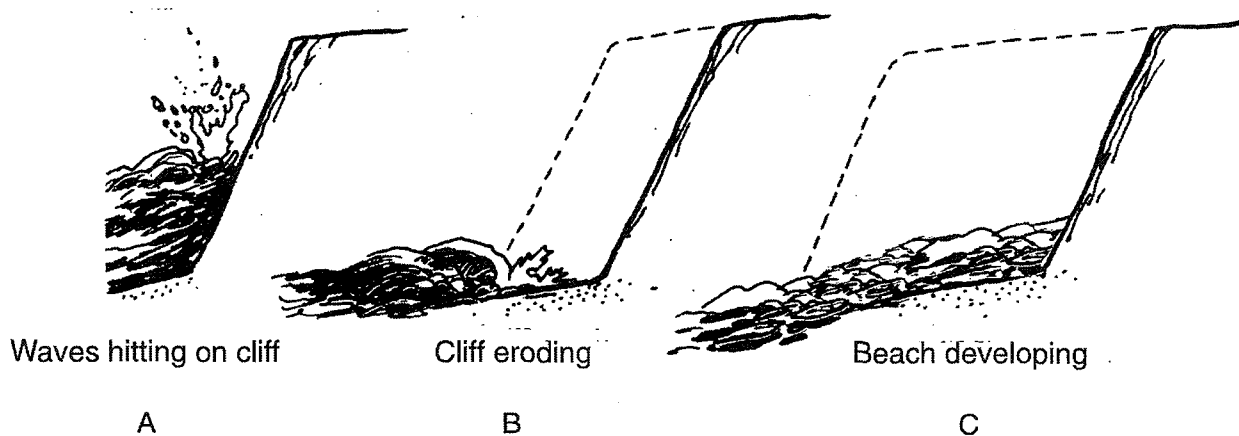
4 The thin layer of water that covers most of Earth's surface is called the

- | | |
|----------------|-----------------|
| (1) atmosphere | (3) lithosphere |
| (2) hemisphere | (4) hydrosphere |

5 Which term refers to the atmospheric conditions that prevail from season to season and year to year at a certain location?

- | | |
|-------------|-----------------|
| (1) weather | (3) equilibrium |
| (2) climate | (4) ecosystem |

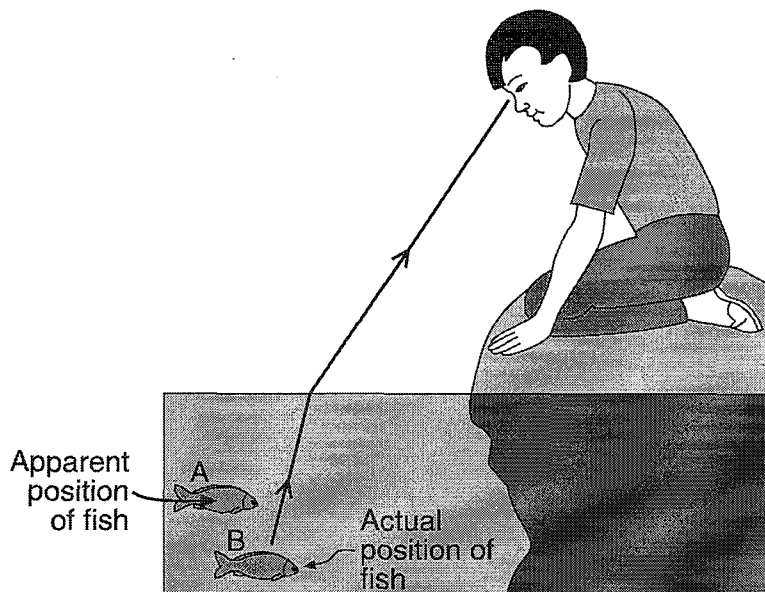
6 The diagram below shows three stages in the formation of a beach.



Which process is mostly responsible for the breaking down of the rock cliff into sand-sized sediment?

- (1) weathering
- (2) faulting
- (3) folding
- (4) precipitation

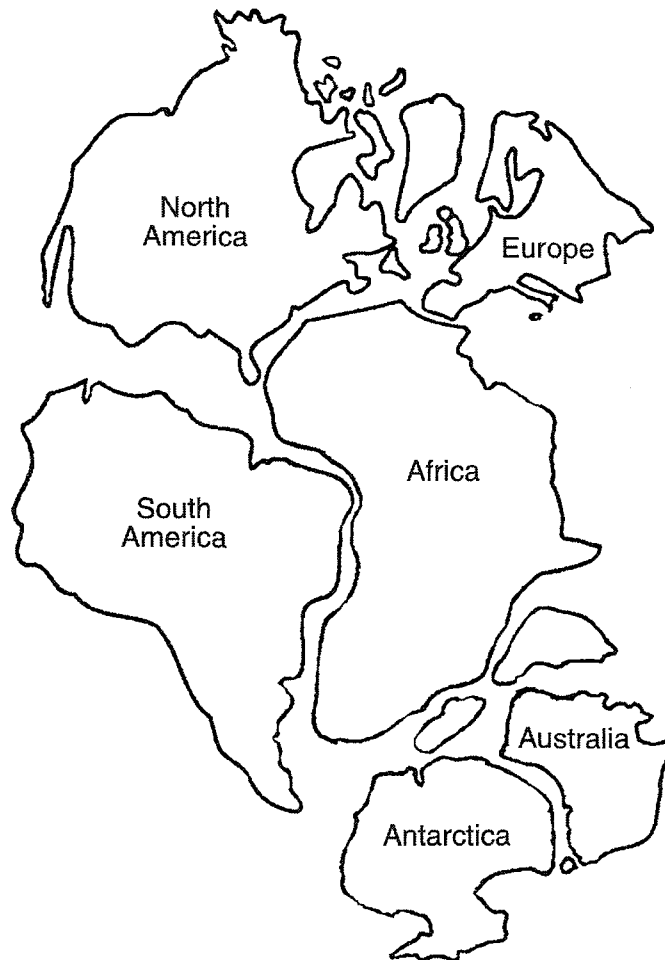
7 The diagram below shows a boy observing a fish located at position B below the surface of the water. The boy sees the fish at position A.



The apparent position of the fish is different from the actual position of the fish. What has happened to the light passing through the water to cause this difference?

- (1) reflection
- (2) absorption
- (3) compression
- (4) refraction

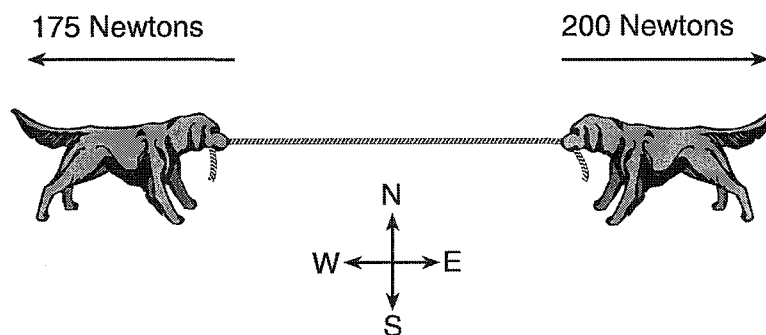
8 The map below shows the probable location of some of the continents at one time in the past.



What feature of the continents best suggests that they were once joined?

- (1) Some continents fit together like puzzle parts.
- (2) Some continents are the same size.
- (3) All continents have mountain ranges.
- (4) All continents contain the same crustal composition.

9 The diagram below shows two dogs pulling on a rope with constant but *unequal* forces.



In which compass direction will both dogs most likely move?

- (1) east
- (2) west
- (3) north
- (4) south

Base your answers to questions 10 and 11 on the map below and on your knowledge of science. The map shows the origin of a maritime tropical air mass. The arrow shows the general track of this air mass. New York State is labeled NY.



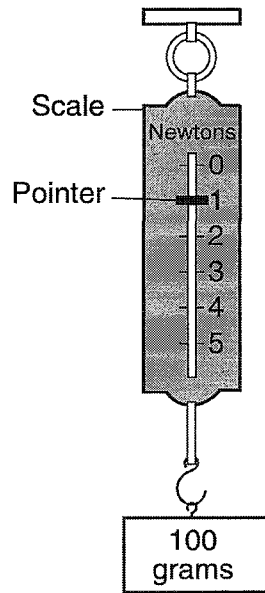
- 10** Which temperature and moisture conditions are associated with this air mass?
- (1) cold and dry
 - (2) warm and humid
 - (3) cold and humid
 - (4) warm and dry

- 11** Which factor has the greatest influence on the direction of the air-mass track?
- (1) upper air currents
 - (2) ocean currents
 - (3) sea breezes
 - (4) mountain barriers

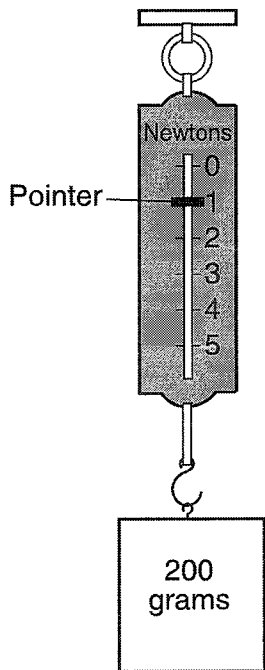
- 12** A common characteristic of sound waves is that they
- (1) are created by vibrations
 - (2) travel in straight lines toward the source
 - (3) travel fastest through empty space
 - (4) move at the speed of light

- 13** Energy from the Sun reaches Earth mainly by the process of
- (1) conduction
 - (2) convection
 - (3) reflection
 - (4) radiation

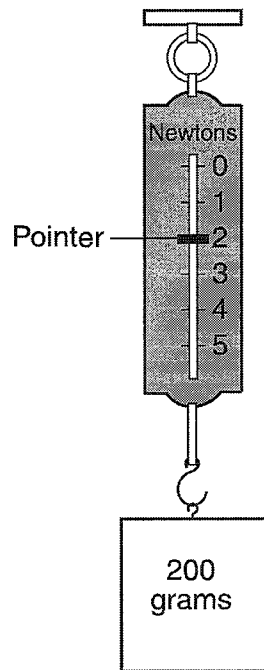
18 The diagram below shows a spring scale being used to weigh a 100-gram mass.



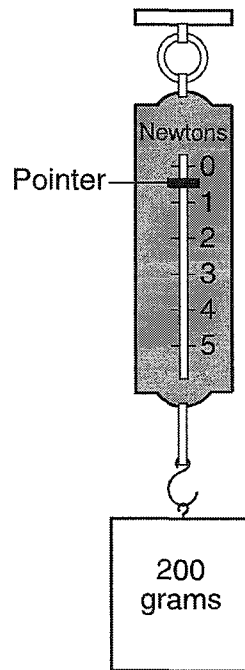
Which diagram best represents the correct reading for the same spring scale being used to weigh a 200-gram mass?



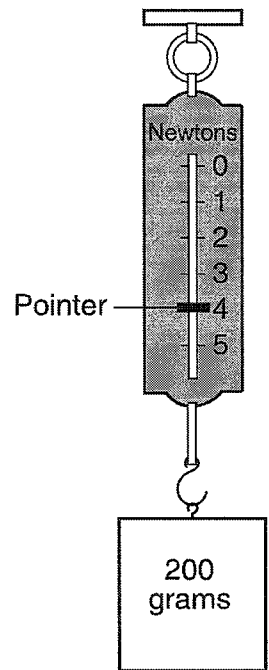
(1)



(2)

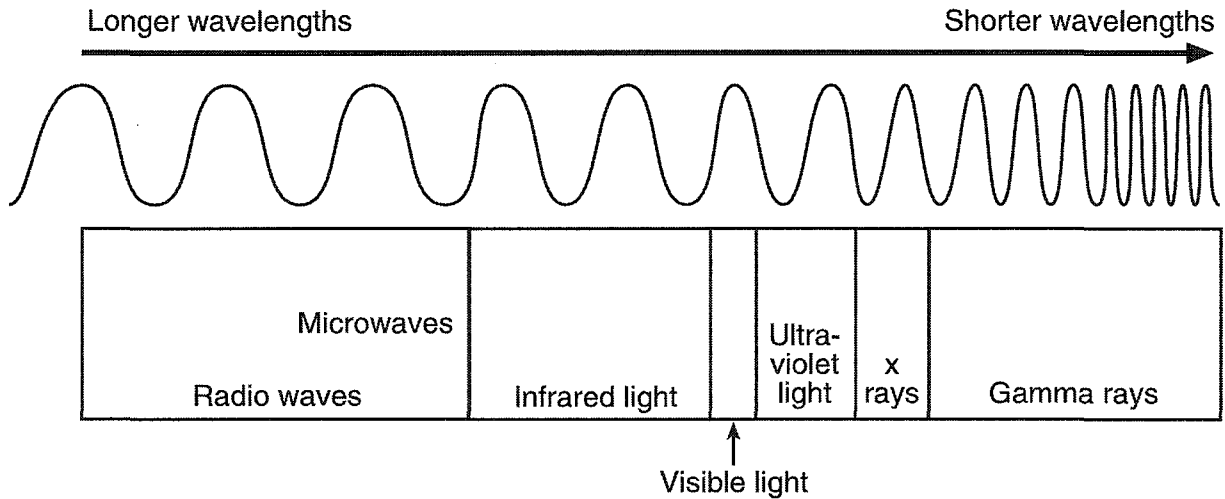


(3)



(4)

19 The diagram below shows the relative wavelengths for several types of electromagnetic energy.



Which type of electromagnetic energy has a shorter wavelength than ultraviolet waves?

- (1) visible light
- (2) microwaves
- (3) x rays
- (4) infrared light

20 Plastic is used to cover the copper wires in the power cords of appliances because plastic differs from copper in

- (1) density
- (2) hardness
- (3) phase at room temperature
- (4) electrical conductivity

21 Which energy source is considered a *nonrenewable* resource?

- (1) solar
- (2) wind
- (3) moving water
- (4) fossil fuel

22 A television set changes electrical energy to sound and light energy. In this process, some energy is

- (1) created
- (2) destroyed
- (3) changed to matter
- (4) changed to heat

23 To provide energy for the work that cells do, all cells need

- (1) chloroplasts
- (2) nutrients
- (3) atmospheric nitrogen
- (4) carbon dioxide

24 Cells are to tissues as tissues are to

- (1) microbes
- (2) organs
- (3) systems
- (4) bacteria

25 Which group is made up of organisms that are all members of the same kingdom?

- (1) cat, frog, and mushroom
- (2) mold, bacteria, and apple tree
- (3) grass, worm, and shark
- (4) fern, rose bush, and corn plant

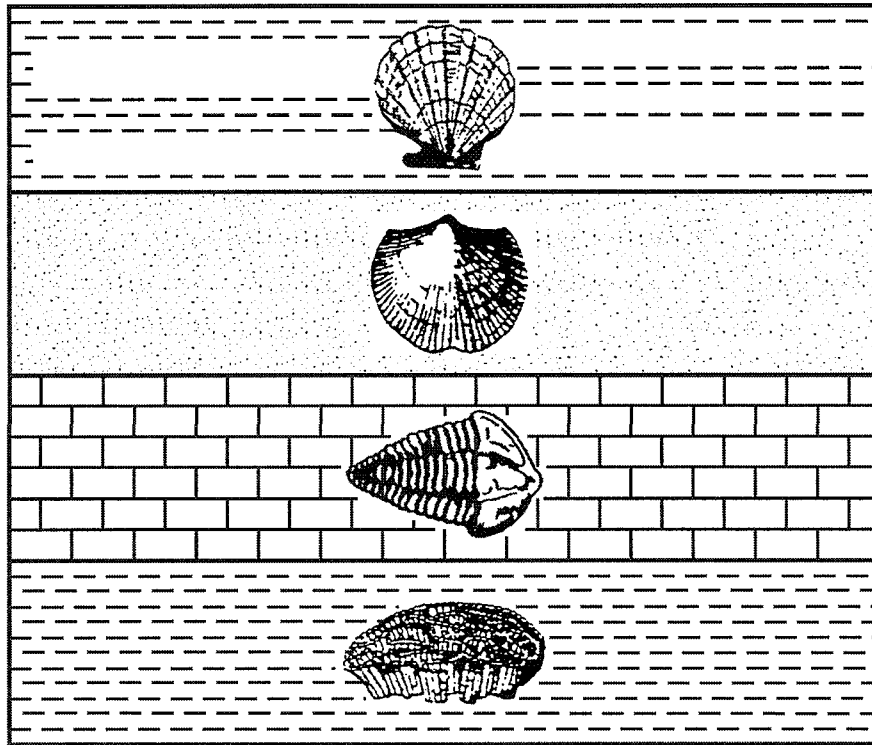
26 When a person breathes, the lungs absorb oxygen, which is used by cells to carry out the process of

- (1) respiration
- (2) secretion
- (3) photosynthesis
- (4) excretion

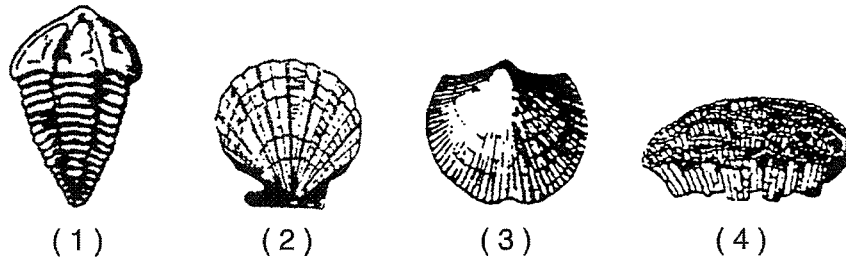
27 Running is an activity that causes the cells in the muscular system to use oxygen at a faster rate. Which system responds by delivering more oxygen to these cells?

- (1) digestive
- (2) nervous
- (3) circulatory
- (4) endocrine

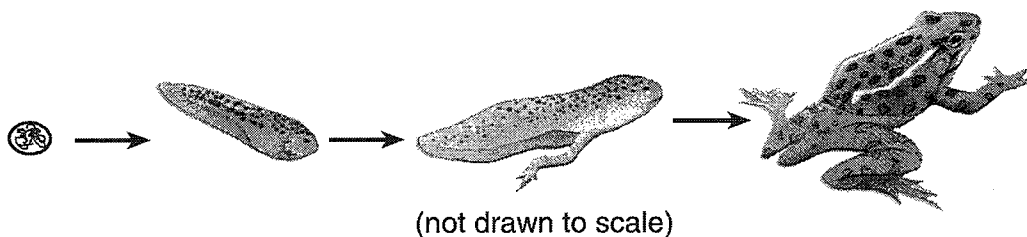
28 The cross section below shows sedimentary rock layers containing fossils.



Assuming that these rock layers have not been overturned, which fossil is in the layer that was formed most recently?



29 The diagram below shows how a frog develops. A fertilized egg hatches into a tadpole with gills. The tadpole develops legs and lungs and becomes an adult frog.



What is the term for this series of changes during the life cycle of the frog?

- (1) fertilization
- (2) reproduction
- (3) mutation
- (4) metamorphosis