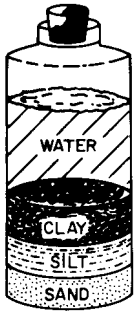
Regents Earth Science Review #3 (Be sure you have your ESRT with you before you begin)

? Clay, silt, and sand are added to a jar of water. The jar is shaken and then allowed to stand quietly for a number of hours. The result of this demonstration could be best used as a model to show that



1) particles with the lowest density settle the fastest
2) particles with the largest diameter settle the fastest
3) water has a higher specific gravity than clay, silt, and sand
4) the bottom layer of a series of sediments is the youngest

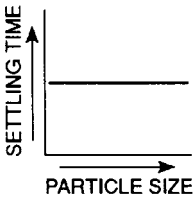
Hint

? Which rock particles will remain suspended in water for the longest time?

1) pebbles
2) sand
3) silt
4) clay

Hint

? In a soil sample, the particles have the same shape but different sizes. Which graph best represents the relationship between particle size and settling time when these particles are deposited in a quiet body of water?



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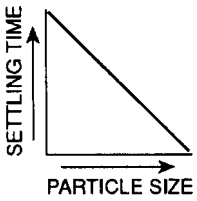

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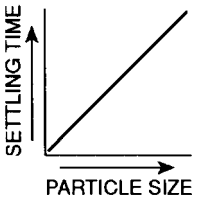

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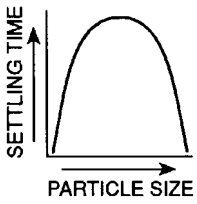


4)

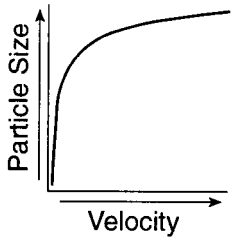
Hint

? How are dissolved materials carried in a river?

1) in solution
2) in suspension
3) by precipitation
4) by bouncing and rolling

Hint

? Which graph best shows the general relationship between stream velocity and the diameter of particles transported by a stream?



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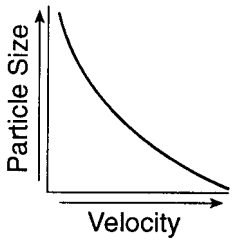

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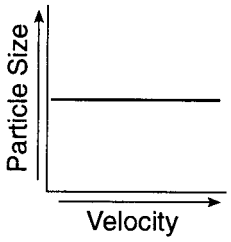

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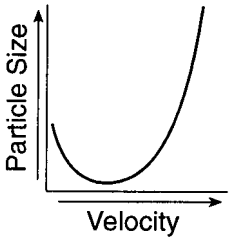
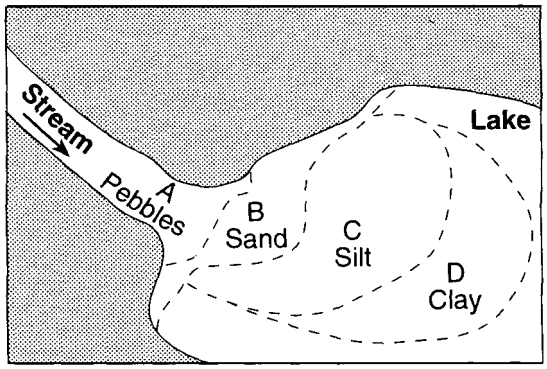


4)

Hint

? The map below shows the sizes of sediments deposited in different locations within a stream and lake. A sample of sediments taken from one location consists mostly of particles that are approximately 0.4 centimeter in diameter. From which location was the sample most likely collected?



From which location was the sample most likely collected?

1) *A*
2) *B*
3) *C*
4) *D*

Hint

? Which statement best describes the conditions existing at a stream location where the erosional-depositional system is in dynamic equilibrium?

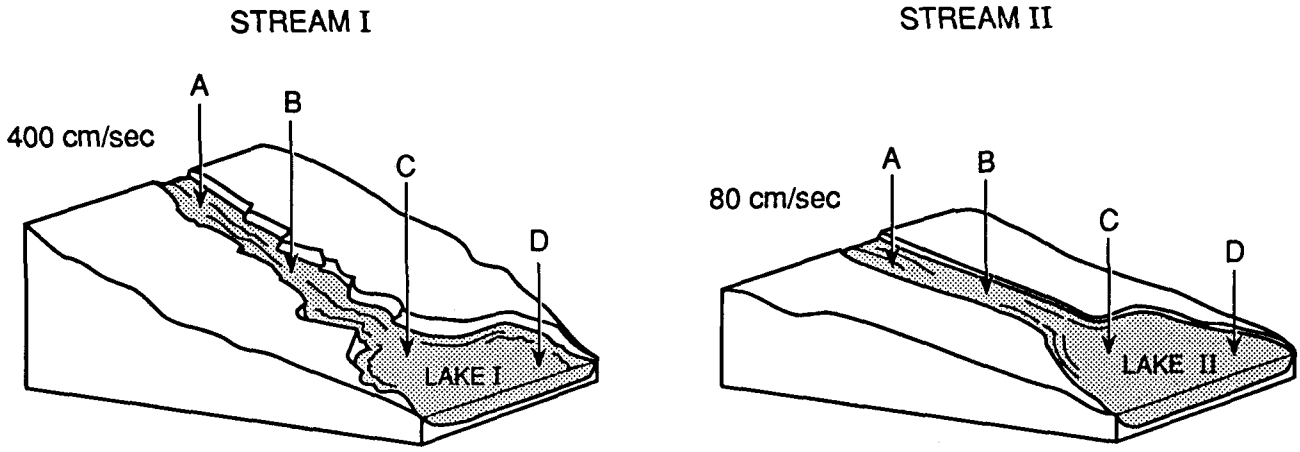
1) More erosion than deposition takes place.
2) More deposition than erosion takes place.
3) Equal amounts of erosion and deposition take place.
4) No erosion or deposition takes place.

Hint

?

Base your answer to the following question on the information and diagrams below.

A mixture of colloids, clay, silt, sand, pebbles, and cobbles is put into stream I at point *A*. The water velocity at point *A* is 400 centimeters per second. A similar mixture of particles is put into stream II at point *A*. The water velocity in stream II at point *A* is 80 centimeters per second.



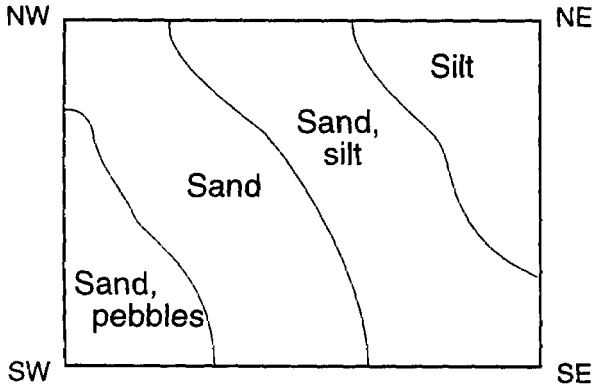
What will most likely occur when the transported sediment reaches lake II?

1) Clay particles will settle first.
2) The largest particles will be carried farthest into the lake.
3) The sediment will become more angular because of abrasion.
4) The particles will be deposited in sorted layers.

Hint

?

A stream entering a lake deposits sediments on the lake bottom in the pattern shown on the map below.



Which corner of the map is nearest to the point where the stream flows into the lake?

1) northeast (NE)
2) northwest (NW)
3) southeast (SE)
4) southwest (SW)

Hint

?

Hillslopes, stream patterns, and the structure of the bedrock would most likely be helpful in identifying

1) fossils
2) earthquake epicenters
3) landscape regions
4) magnetic north

Hint

?

The four particles shown in the table below are of equal volume and are dropped into a column filled with water.

Particle	Shape	Density
A	flat	2.5 g/cm^3
B	flat	3.0 g/cm^3
C	round	2.5 g/cm^3
D	round	3.0 g/cm^3

Which particle would usually settle most rapidly?

1) *A*
2) *B*
3) *C*
4) *D*

Hint

?

Which statement best describes sediments deposited by glaciers and rivers?

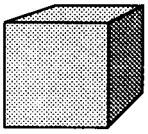
1) Glacial deposits and river deposits are both sorted.
2) Glacial deposits are sorted, and river deposits are unsorted.
3) Glacial deposits are unsorted, and river deposits are sorted.
4) Glacial deposits and river deposits are both unsorted.

Hint

? Four samples of aluminum, *A*, *B*, *C*, and *D*, have identical volumes and densities, but different shapes. Each piece is dropped into a long tube filled with water. The time each sample takes to settle to the bottom of the tube is shown in the table below.

Sample	Time to Settle (sec)
A	2.5
B	3.7
C	4.0
D	5.2

Which diagram most likely represents the shape of sample *A*?



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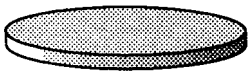

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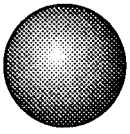

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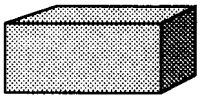


4)

Hint

? Why do the particles carried by a river settle to the bottom as the river enters the ocean?

1) The density of the ocean water is greater than the density of the river water.
2) The kinetic energy of the particles increases as the particles enter the ocean.
3) The velocity of the river water decreases as it enters the ocean.
4) The large particles have a greater surface area than the small particles.

Hint

? Which characteristics of a landscape region would provide the best information about the stage of development of the landscape?

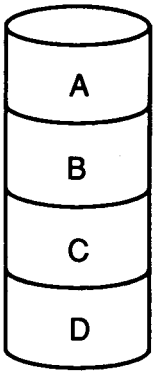
1) the age and fossil content of the bedrock
2) the type of hillslopes and the stream patterns
3) the amount of precipitation and the potential evapotranspiration
4) the type of vegetation and the vegetation's growth rate

Hint

? Four different kinds of particles (*A*, *B*, *C*, and *D*) with the same shape and diameter were mixed and poured into a column of water. The mass, volume, and density of the particles are shown below.

Particle	Mass (g)	Volume (cm^3)	Density (g/cm^3)
A	100	67	1.5
B	100	33	3.0
C	100	22	4.5
D	100	17	6.0

Which diagram best shows how the particle beds would be arranged in the column of water after settling?



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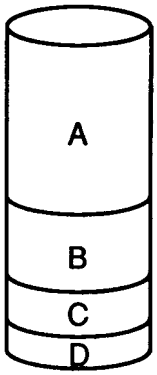

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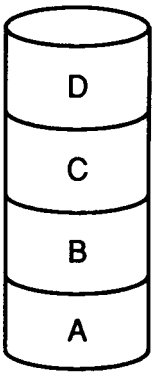

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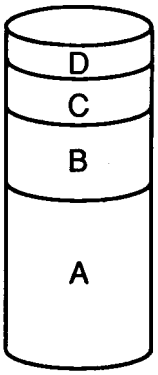


4)

Hint

? Which evidence could be used to help classify a landscape region as a plateau?

1) rounded peaks
2) trellis drainage pattern
3) V-shaped river valleys
4) horizontal rock structure

Hint

? In which type of landscape are meandering streams most likely found?

1) regions of waterfalls
2) gently sloping plains
3) steeply sloping hills
4) V-shaped valleys

Hint

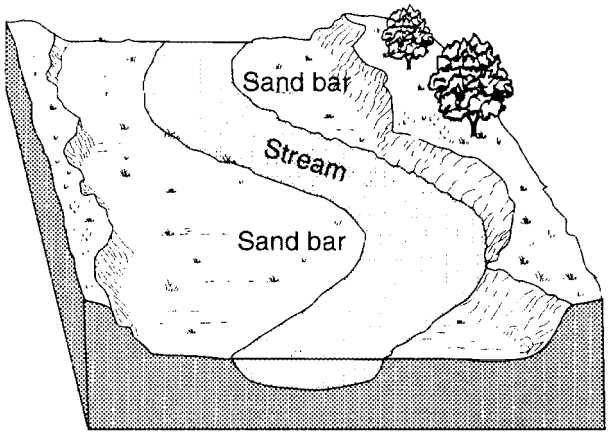
? Which diagram best represents a cross section of a valley which was glaciated and then eroded by a stream?

1) 3)

2) 4)

Hint

? The diagram below shows a portion of a stream.

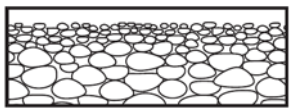


The sand bars formed as a direct result of

1) erosion due to a decrease in stream velocity
2) erosion due to an increase in stream velocity
3) deposition due to a decrease in stream velocity
4) deposition due to an increase in stream velocity

Hint

? The cross section below shows a profile of a sediment deposit.



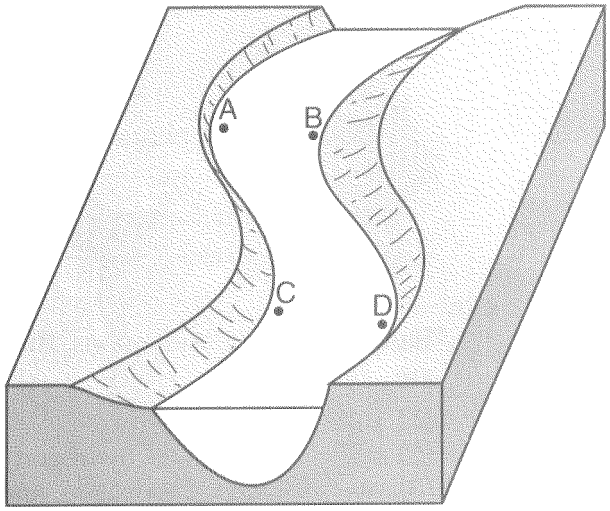
(Drawn to scale)

The pattern of sediment size shown indicates that these sediments were most likely deposited within a

1) landslide 3) moraine
2) drumlin 4) delta

Hint

Base your answers to questions **22** and **23** on the diagram below, which shows a meandering stream. Letters A, *B*, C, and *D* indicate locations on the streambed.



? At which point is the amount of deposition more than the amount of erosion?

1) *A* 3) *C*
2) *B* 4) *D*

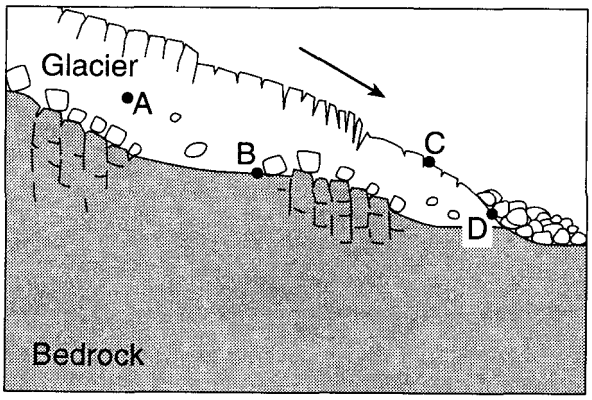
Hint

? At which two locations is the rate of erosion greater than the rate of deposition?

1) A and B 3) C and D
2) *B* and *C* 4) *D* and A

Hint

? The cross section below represents the transport of sediments by a glacier.

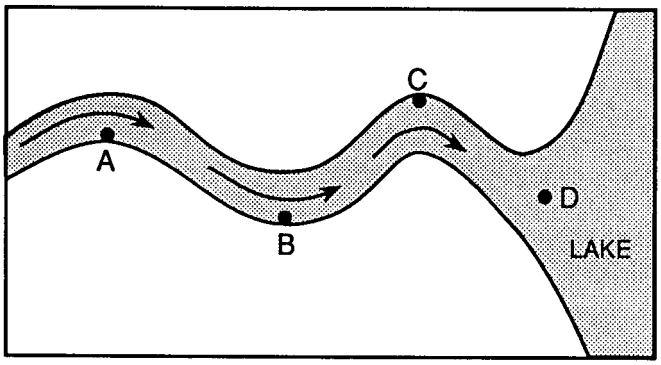


At which location is deposition most likely the dominant process?

1) *A* 3) *C*
2) *B* 4) *D*

Hint

? The map below shows the top view of a meandering stream as it enters a lake.

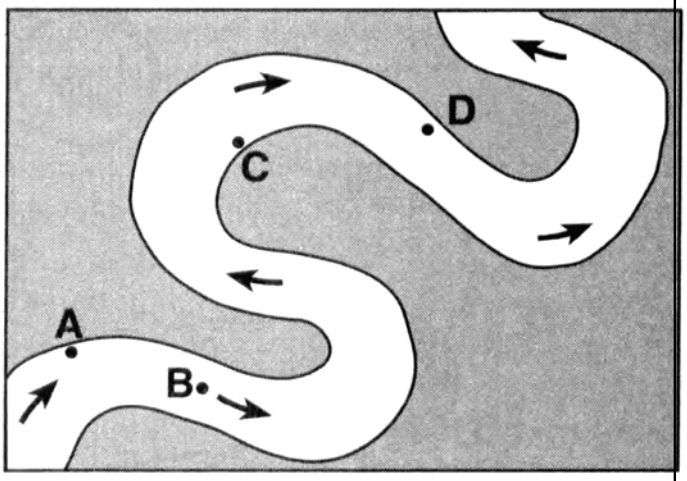


At which points along the stream are erosion and deposition dominant?

1) Erosion is dominant at *A* and *D*, and deposition is dominant at *B* and *C*.
2) Erosion is dominant at *B* and *C*, and deposition is dominant at *A* and *D*.
3) Erosion is dominant at *A* and *C*, and deposition is dominant at *B* and *D*.
4) Erosion is dominant at *B* and *D*, and deposition is dominant at *A* and *C*.

Hint

? The map below shows a meandering stream. Points *A*, *B*, *C*, and *D* represent locations along the stream bottom.



At which location is the greatest amount of sediment most likely being deposited?

1) *A*
2) *B*
3) *C*
4) *D*

Hint

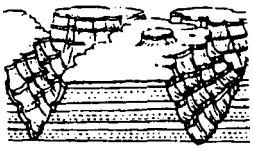
? Landscape regions are best identified by their

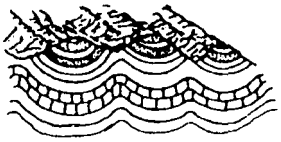
1) fossils and rock age
2) latitude and climate
3) elevation and bedrock structure
4) soil composition and particle size

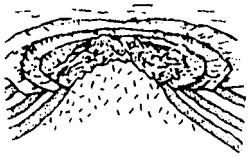
Hint

? Which diagram represents a plateau landscape?

1) 

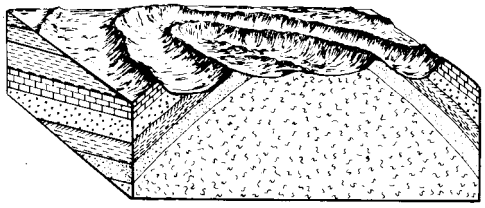
2) 

3) 

4) 

Hint

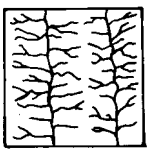
? Which kind of stream pattern would most likely be found on the type of landscape shown in the diagram?



1) 

3) 

2) 

4) 

Hint

? The table below shows characteristics of three landscape regions, X, Y, and Z.

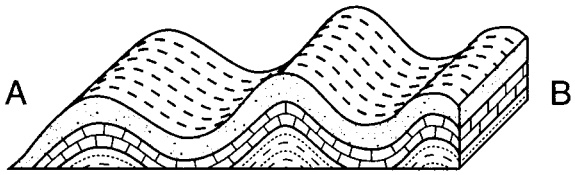
Landscape Region	Relief	Bedrock
X	Great relief, high peaks, deep valleys	Many types, including igneous and metamorphic rocks, nonhorizontal structure
Y	Moderate to high relief	Flat layers of sedimentary rock or lava flows
Z	Very little relief, low elevations	Many types and structures

Which terms, when substituted for X, Y, and Z, best complete the table?

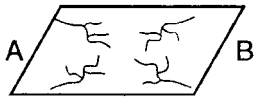
1) X = mountains, Y = plains, Z = plateaus
2) X = plateaus, Y = mountains, Z = plains
3) X = plains, Y = plateaus, Z = mountains
4) X = mountains, Y = plateaus, Z = plains

Hint

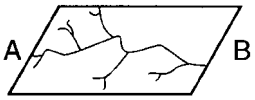
? The diagram below represents a landscape region and its underlying bedrock structure.



Which stream pattern is most likely present in this area?



1)



3)

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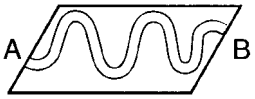


4)

Hint

? Which substance found in a soil sample collected in an arid region would most likely be absent in a soil sample collected in a humid region?

1) rock salt
2) quartz
3) obsidian
4) pyroxene

Hint

? Most of the surface bedrock in New York State south of latitude 43° N. and west of longitude 75° W. was formed during which period?

1) Silurian
2) Devonian
3) Cambrian
4) Ordovician

Hint

? Which city is located on the oldest bedrock?

1) Jamestown
2) Binghamton
3) Syracuse
4) Watertown

Hint

? Between which two cities in New York State would the oldest surface bedrock be found?

1) Plattsburgh and Watertown
2) Jamestown and Rochester
3) Utica and Binghamton
4) Syracuse and Albany

Hint

? Which New York State landscape region contains mostly Devonian bedrock?

1) Adirondack Mountains
2) Atlantic Coastal Plain
3) Allegheny Plateau
4) Tug Hill Plateau

Hint

? Which New York State landscape region has the lowest elevation, the most nearly level land surface, and is composed primarily of Cretaceous through Pleistocene unconsolidated sediments?

1) the Hudson-Mohawk Lowlands
2) the Atlantic Coastal Plain
3) the Champlain Lowlands
4) the Erie-Ontario Lowlands (Plains)

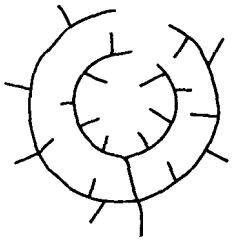
Hint

? Which rock is usually composed of several different minerals?

1) rock gypsum
2) chemical limestone
3) quartzite
4) gneiss

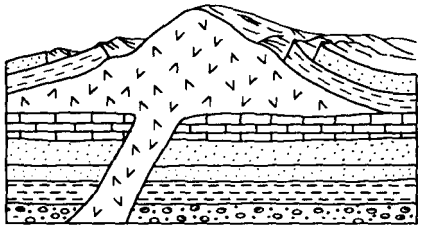
Hint

? The diagram below represents a surface stream drainage pattern.



Which geologic cross section represents a landscape region most likely to produce this drainage pattern?

1)



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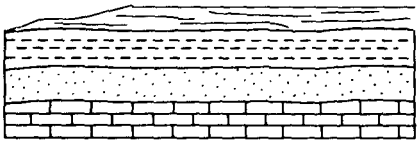

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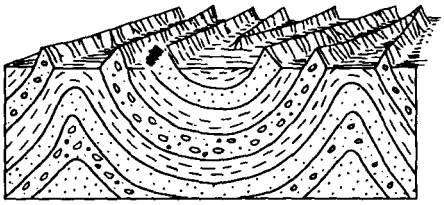

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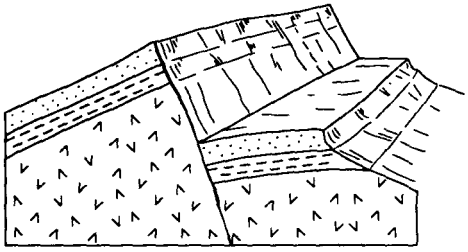


Hint

? Which statement best describes a general property of rocks?

1) Most rocks have a number of minerals in common.
2) Most rocks are composed of a single mineral.
3) All rocks contain fossils.
4) All rocks contain minerals formed by compression and cementation.

Hint

? In which group are all the earth materials classified as minerals?

1) feldspar, quartz, and olivine
2) granite, rhyolite, and basalt
3) cobbles, pebbles, and silt
4) conglomerate, sandstone, and shale

Hint

? Which two rocks have the most similar mineral composition?

1) marble and rhyolite
2) limestone and basalt
3) quartzite and rock salt
4) granite and phyllite

Hint

? The three statements below are observations of the same rock sample:

• The rock has intergrown crystals from 2 to 3 millimeters in diameter.
• The minerals in the rock are gray feldspar, green olivine, green pyroxene, and black amphibole.
• There are no visible gas pockets in the rock.

This rock sample is most likely

1) sandstone
2) gabbro
3) granite
4) phyllite

Hint

? Most rock gypsum is formed by the

1) heating of previously existing foliated bedrock
2) cooling and solidification of lava
3) compaction and cementation of shells and skeletal remains
4) chemical precipitation of minerals from seawater

Hint

? Minerals are identified on the basis of

1) the method by which they were formed
2) the type of rock in which they are found
3) the size of their crystals
4) their physical and chemical properties

Hint

? Scratching a mineral against a glass plate is a method used for determining the mineral's

1) color
2) hardness
3) luster
4) cleavage

Hint

? Which mineral property is illustrated by the peeling of muscovite mica into thin, flat sheets?

1) luster
2) streak
3) hardness
4) cleavage

Hint

Base your answers to questions **48** and **49** on the table below which provides information about the crystal sizes and the mineral compositions of four igneous rocks, *A*, *B*, *C*, and *D*.

	Coarse Grained		Fine Grained	
	Rock *A*	Rock *B*	Rock *C*	Rock *D*
Mineral	Percent of Rock	Percent of Rock	Percent of Rock	Percent of Rock
Quartz	40	0	0	0
Pyroxene	0	25	0	70
Plagioclase feldspar	20	0	60	10
Potassium feldspar	20	0	0	0
Biotite	10	0	17	0
Hornblende	10	0	23	3
Olivine	0	75	0	17

?

Which characteristic of rock *B* could be caused by the minerals pyroxene and olivine?

1) green color 2) felsic composition 3) folded layers 4) metallic luster

Hint

?

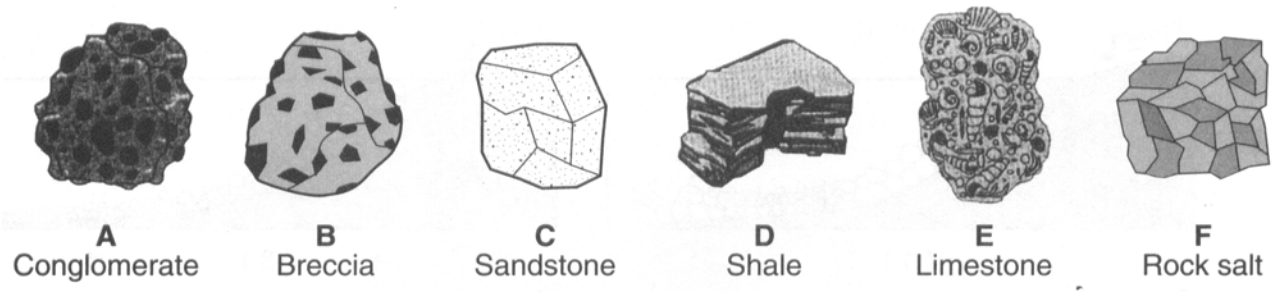
The mineral quartz in rock *A* is composed of the two most abundant elements by mass in Earth's crust. These two elements are oxygen and

1) magnesium 2) silicon 3) iron 4) lead

Hint

?

Base your answer to the following question on the drawings of six sedimentary rocks labeled *A* through *F*.



Which two rocks are composed primarily of quartz, feldspar, and clay minerals?

1) rock salt and conglomerate 2) rock salt and breccia 3) sandstone and shale 4) sandstone and limestone

Hint

?

Which of the following elements is not found in Plagioclase Feldspar?

1) Na 3) Si
2) Al 4) Pb

Hint

?

A rock that forms directly from land-derived sediments is

1) sandstone 3) gabbro
2) dolostone 4) granite

Hint

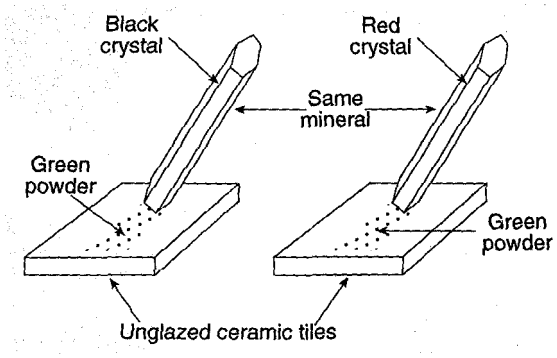
?

How are the minerals biotite mica and muscovite mica different?

1) Biotite mica is colorless, but muscovite mica is not.
2) Biotite mica contains iron and/or magnesium, but muscovite mica does not.
3) Muscovite mica scratches quartz, but biotite mica does not.
4) Muscovite mica cleaves into thin sheets, but biotite mica does not.

Hint

? The diagram below shows the results of one test for mineral identification.



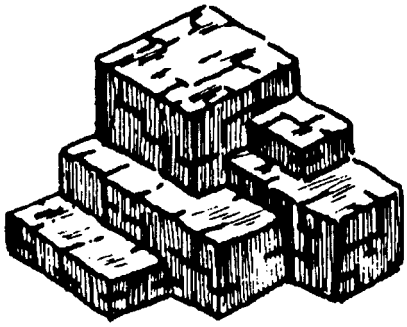
Which mineral property is being tested?

1) density
2) fracture
3) streak
4) luster

Hint

? Base your answer to the following question on the diagram and table below.

Mineral Sample A



Mass = 210 grams

Mineral Density Table

Mineral	Density (g/cm^3)	Mineral	Density (g/cm^3)
Gypsum	2.3	Hornblende	3.2
Orthoclase	2.6	Chalcopyrite	4.2
Quartz	2.7	Pyrite	5.0
Calcite	2.7	Magnetite	5.2
Dolomite	2.9	Galena	7.5
Fluorite	3.2	Copper	8.9

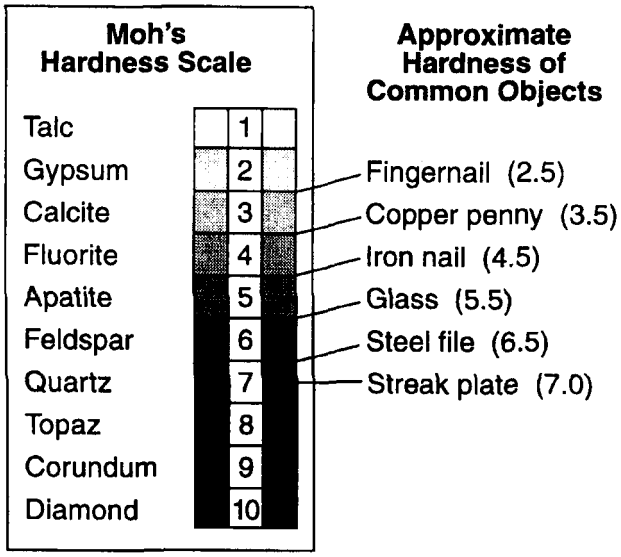
The original shape of mineral sample *A* was altered when it was hit with a rock hammer. Which physical property caused the mineral to break as it did?

1) hardness
2) luster
3) cleavage
4) streak

Hint

? Base your answer to the following question on the data table below.

MINERAL HARDNESS

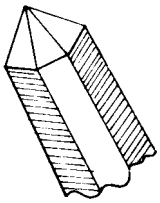


Which statement is best supported by the data shown?

1) An iron nail contains fluorite.
2) A streak plate is composed of quartz.
3) Topaz is harder than a steel file.
4) Apatite is softer than a copper penny.

Hint

? The crystal characteristics of quartz shown in the accompanying diagram are the result of the



1) internal arrangement of the elements from which quartz is formed
2) shape of the other rock crystals in the area where the quartz was formed
3) amount of weathering that the quartz has been exposed to
4) age of the quartz crystal

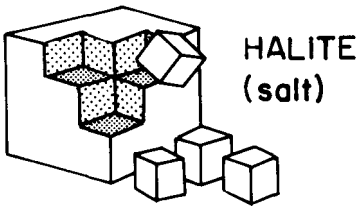
Hint

? Which element combines with silicon to form the tetrahedral unit of structure of the silicate minerals?

1) oxygen
2) nitrogen
3) potassium
4) hydrogen

Hint

? What causes the characteristic crystal shape and cleavage (breaking along flat surfaces) of the mineral halite as shown in the diagram below?



1) metamorphism of the halite
2) the internal arrangement of the atoms in halite
3) the amount of erosion the halite has undergone
4) the shape of other minerals located where the halite formed

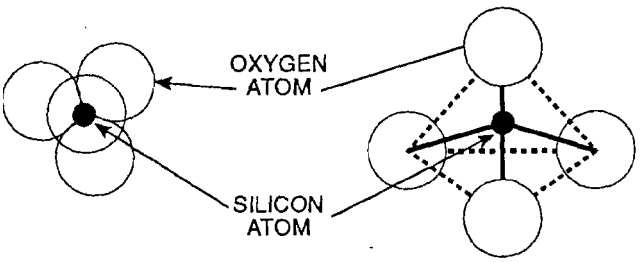
Hint

? Although diamonds and graphite both consist of the element carbon, their physical properties are very different. The most likely explanation for these differences is that

1) the internal arrangement of carbon atoms is different in each mineral
2) graphite contains impurities not found in diamonds
3) graphite contains radioactive carbon-14 but diamonds do not
4) diamonds contain silicate tetrahedra but graphite does not

Hint

? The diagram below represents top and side views of a model of the silicate tetrahedron.



This tetrahedron is found in large amounts in the Earth's

1) hydrosphere
2) troposphere
3) lithosphere
4) stratosphere

Hint

? Which sedimentary rock would be composed of particles ranging in size from 0.0004 centimeter to 0.006 centimeter?

1) conglomerate
2) dolostone
3) siltstone
4) shale

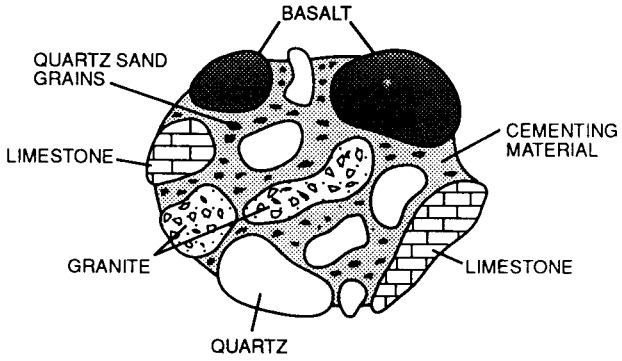
Hint

? Which property best describes a rock which has formed from sediments?

1) crystalline structure
2) distorted structure
3) banding or zoning of minerals
4) fragmental particles arranged in layers

Hint

? The diagram below represents a conglomerate rock. Some of the rock particles are labeled.



Which conclusion is best made about the rock particles?

1) They are the same age.
2) They originated from a larger mass of igneous rock.
3) They all contain the same minerals.
4) They have different origins.

Hint

? Which sequence of events occurs in the formation of a sedimentary rock?

1) Source material eroded → Sediments deposited → Sediments compacted and cemented

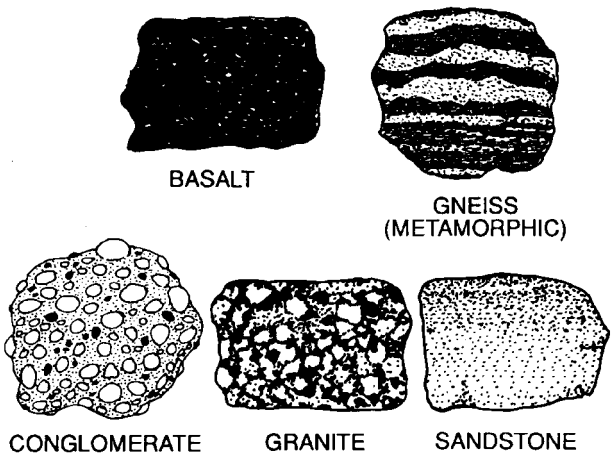
2) Sediments compacted and cemented → Sediments deposited → Source material eroded

3) Sediments deposited → Sediments compacted and cemented → Source material eroded

4) Source material eroded → Sediments compacted and cemented → Sediments deposited

Hint

Base your answers to questions **66** and **67** on the diagrams below of five rock samples.



? Which sample is composed of sediments 0.006 centimeter to 0.2 centimeter in size that were compacted and cemented together?

1) conglomerate
2) sandstone
3) gneiss
4) granite

Hint

? Which sample would most likely contain fossils?

1) gneiss
2) granite
3) sandstone
4) basalt

Hint

? Which sedimentary rock could form as a result of evaporation?

1) conglomerate
2) sandstone
3) shale
4) limestone

Hint

? Large rock salt deposits in the Syracuse area indicate that the area once had

1) large forests
2) a range of volcanic mountains
3) many terrestrial animals
4) a warm, shallow sea

Hint

? Limestone, gypsum, and salt are rocks formed by the processes of

1) melting and solidification
2) evaporation and precipitation
3) erosion and deposition
4) weathering and metamorphism

Hint

? Limestone is a sedimentary rock which may form as a result of

1) melting
2) recrystallization
3) metamorphism
4) biologic processes

Hint

? Sedimentary rocks of organic origin would most likely be formed from

1) sediments eroded by running water
2) materials deposited by glaciers
3) shells of marine animals
4) particles removed from the atmosphere by precipitation

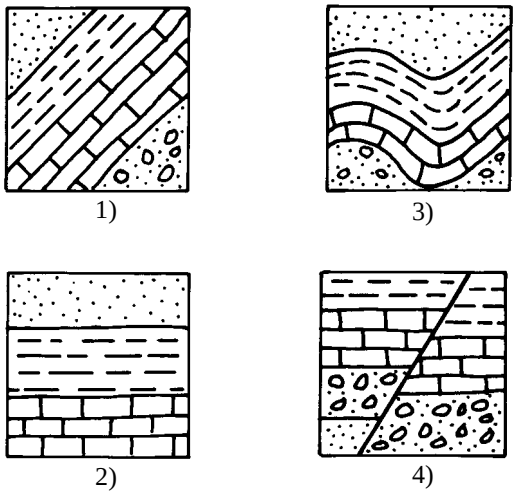
Hint

? Which type(s) of rock can be the source of deposited sediments?

1) igneous and metamorphic rocks, only
2) metamorphic and sedimentary rocks, only
3) sedimentary rocks, only
4) igneous, metamorphic, and sedimentary rocks

Hint

? The diagrams below show cross sections of exposed bedrock. Which cross section shows the *least* evidence of crustal movement?



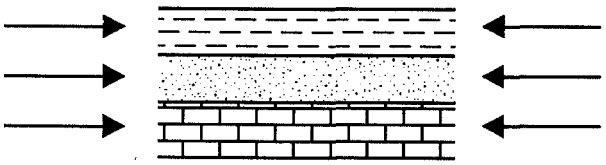
Hint

? Rock strata containing fossils of shark's teeth are found at an elevation of 5,000 meters. Which process most likely caused the shark's teeth to be located at this elevation?

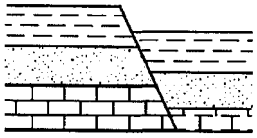
1) crustal subsidence
2) ocean floor spreading
3) crustal uplift
4) continental glaciation

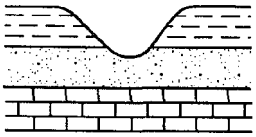
Hint

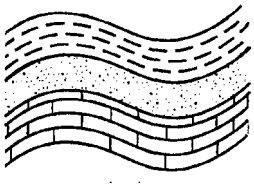
? The diagram below represents a section of the Earth's bedrock. The arrows show the direction of forces that are gradually compressing this section.

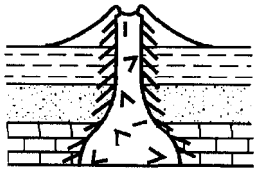


Which diagram represents the most probable result of these forces?

1) 

2) 

3) 

4) 

Hint

? Shallow-water fossils are found in rock layers that are deep beneath the ocean floor. This suggests that

1) shallow-water organisms always migrate to the deeper waters to die
2) parts of the ocean floor have been uplifted
3) parts of the ocean floor have subsided
4) the surface water cooled off, killing the organisms

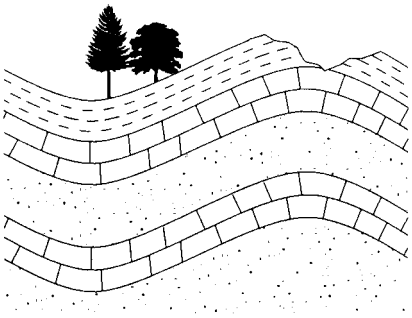
Hint

? Where are earthquakes most likely to take place?

1) along the core-mantle interface
2) where the composition of the Earth tends to be uniform
3) near the Earth's Equator
4) near a fault zone

Hint

? The diagram below shows a cross section of sedimentary rock layers.

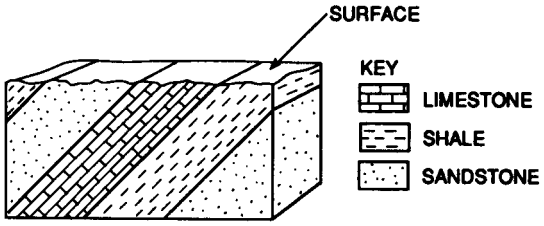


Which statement about the deposition of the sediments best explains why these layers have the curved shape shown?

1) Sediments were deposited in horizontal layers and later disturbed by crustal activity.
2) Sediments were deposited on an uneven curving seafloor.
3) Sediments were deposited after widespread volcanic eruptions.
4) Sediments were deposited between two diverging oceanic plates.

Hint

? The diagram below represents a cross section of a portion of the Earth's crust.



What do these tilted rock layers suggest?

1) This area has remained fairly stable since the sediments were deposited.
2) The sediments were deposited at steep angles and then became rock.
3) Metamorphism followed the deposition of the sediments.
4) Crustal movement occurred sometime after the sediments were deposited.

Hint

? Which best describes a major characteristic of both volcanoes and earthquakes?

1) They are centered at the poles.
2) They are located in the same geographic areas.
3) They are related to the formation of glaciers.
4) They are restricted to the Southern Hemisphere.

Hint

? Crustal disturbances such as earthquakes and volcanic eruptions are best described as

1) events that are cyclic and predictable
2) events that are usually related and cannot be predicted with accuracy
3) unrelated events that follow no pattern
4) phenomena seldom found in the same regions

Hint

? Where does most present-day faulting of rock occur?

1) in regions of glacial activity
2) in the interior areas of continents
3) at locations with many lakes
4) at interfaces between moving parts of the crust

Hint

? What do mid-ocean ridges and hot spots beneath ocean plates have in common?

1) Rising magma moves due to density differences
2) They are located along crustal plate boundaries
3) Local earthquakes originate at great depths
4) Neither is associated with plate motions

Hint

? Hot springs on the ocean floor near the midocean ridges provide evidence that

1) convection currents exist in the asthenosphere
2) meteor craters are found beneath the oceans
3) climate change has melted huge glaciers
4) marine fossils have been uplifted to high elevations

Hint

? Contact zones between tectonic plates may produce trenches. One of these trenches is located at the boundary between which plates?

1) Australian and Pacific
2) South American and African
3) Australian and Antarctic
4) North American and Eurasian

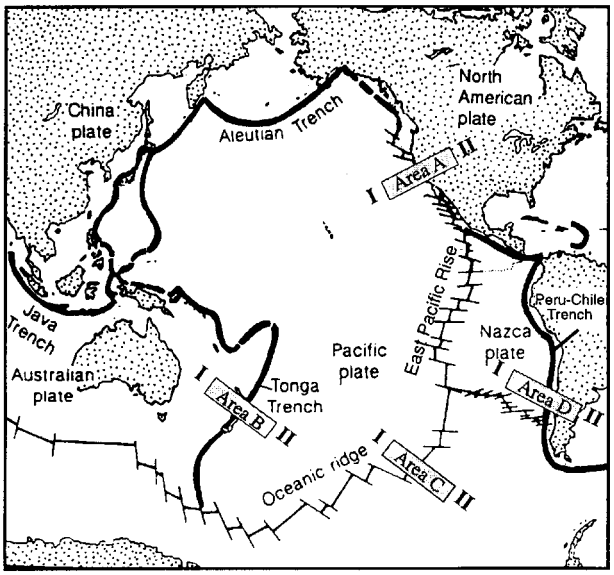
Hint

? The border between the South American plate and the African plate is best described as

1) converging and located at an oceanic ridge
2) converging and located at an oceanic trench
3) diverging and located at an oceanic ridge
4) diverging and located at an oceanic trench

Hint

? Base your answer to the following question on the map below which shows mid-ocean ridges and trenches in the Pacific Ocean. Specific areas *A*, *B*, *C*, and *D* are indicated by shaded rectangles.

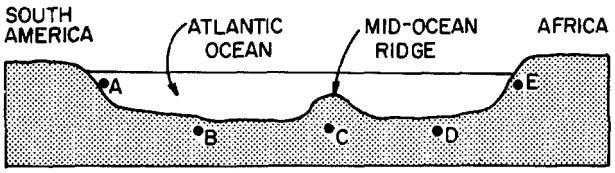


Movement of the crustal plates shown in the diagram is most likely caused by

1) the revolution of the Earth
2) the erosion of the Earth's crust
3) shifting of the Earth's magnetic poles
4) convection currents in the Earth's mantle

Hint

? The diagram below represents a cross section of the Atlantic Ocean from the eastern coast of South America to the western coast of Africa along the Equator.



At what point would evidence of a rising convection current in the mantle most likely be found?

1) *A*
2) *B*
3) *C*
4) *E*

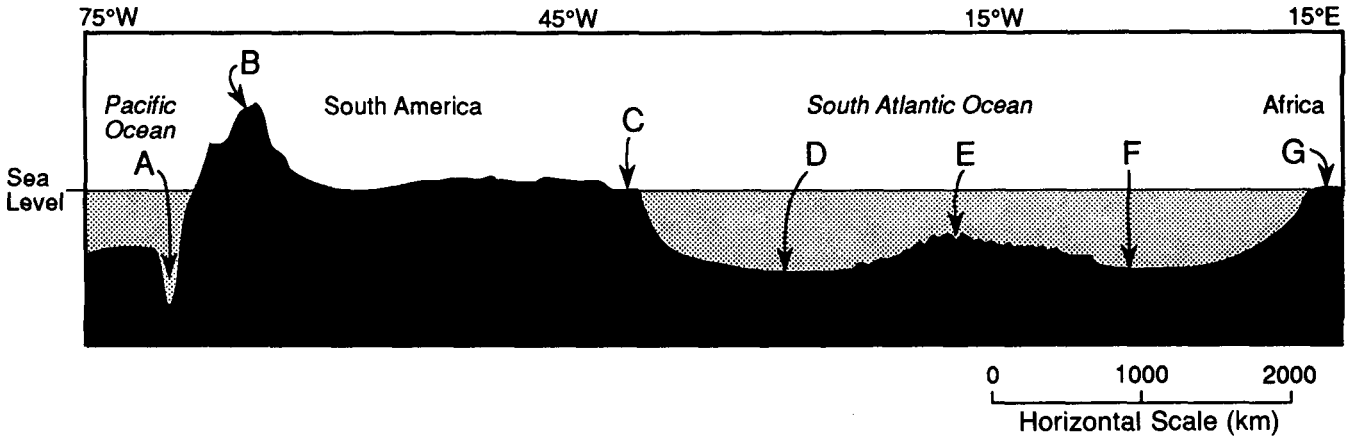
Hint

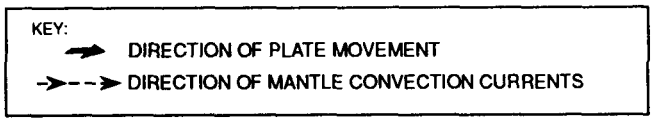
? Living corals are found in warm, shallow seas. Coral fossils have been found in the sedimentary rocks of Alaska. These findings suggest that

1) Alaska once had a tropical marine environment
2) Alaska's cold climate fossilized the coral
3) coral usually develops in cold climates
4) ocean currents carried the coral to Alaska

Hint

Base your answers to questions **91** and **92** on the diagram below which is a cross section of the major surface features of the Earth along the Tropic of Capricorn (23½° S) between 75° W and 15° E longitude. Letters *A* through *G* represent locations on the Earth's crust.





? A mid-ocean ridge is located near position

1) *A* 2) *E* 3) *C* 4) *D*

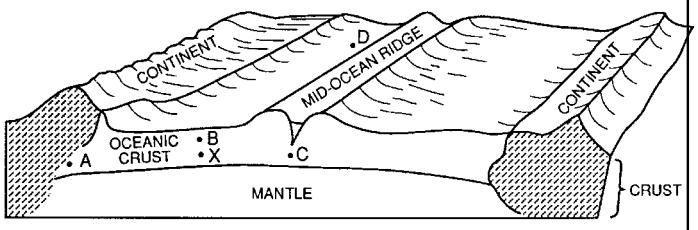
Hint

? Which two locations in the diagram have bedrock of approximately the same age, which has been separated by seafloor spreading?

1) *A* and *C* 2) *C* and *E* 3) *D* and *F* 4) *E* and *F*

Hint

? The diagram below represents a cross section of a portion of the Earth's crust and mantle. Letters *A*, *B*, *C*, *D* and *X* identify locations within the crust.



The age of oceanic crust increases along a line between location *X* and location

1) *A* 3) *C*

2) *B* 4) *D*

Hint

? Which statement best supports the theory that all the continents were once a single landmass?

1) Rocks of the ocean ridges are older than those of the adjacent sea floor.
2) Rock and fossil correlation can be made where the continents appear to fit together.
3) Marine fossils can be found at high elevations above sea level on all continents.
4) Great thicknesses of shallow-water sediments are found at interior locations on some continents.

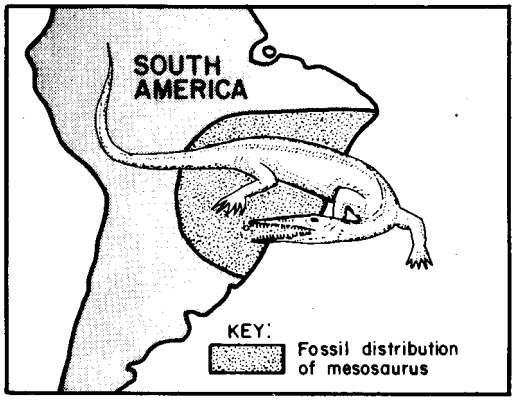
Hint

? Which statement best supports the theory of continental drift?

1) Basaltic rock is found to be progressively younger at increasing distances from a mid-ocean ridge.
2) Marine fossils are often found in deep-well drill cores.
3) The present continents appear to fit together as pieces of a larger landmass.
4) Areas of shallow-water seas tend to accumulate sediment, which gradually sinks.

Hint

? On what other landmass would you most likely find fossil remains of the late Paleozoic reptile called Mesosaurus shown below?



1) North America 

2) Africa 

3) Antarctica 

4) Eurasia 

Hint

? Which evidence supports the theory of ocean floor spreading?

1) The rocks of the ocean floor and the continents have similar origins.
2) In the ocean floor, rocks near the mid-ocean ridge are cooler than rocks near the continents.
3) The pattern of magnetic orientation of rocks is similar on both sides of the mid-ocean ridge.
4) The density of oceanic crust is greater than the density of continental crust.

Hint

? Which inference is supported by a study of the Earth's magnetic rock record?

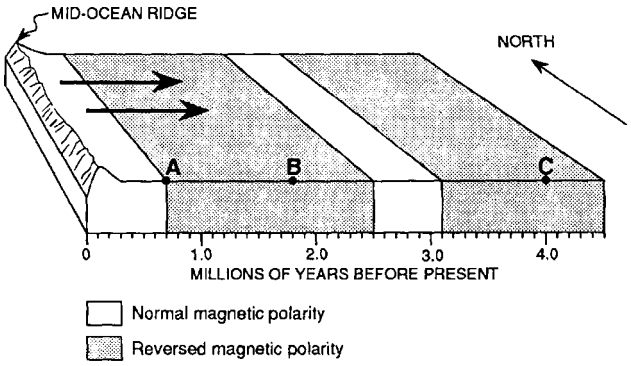
1) The Earth's magnetic field is only 2 million years old.
2) The Earth's magnetic field is 50 times stronger now than in the past.
3) The Earth's magnetic poles are usually located at 0 latitude.
4) The Earth's magnetic poles appear to have changed location over time.

Hint

Base your answers to questions **99** and **100** on the information and diagram below.

At intervals in the past, the Earth's magnetic field has reversed. The present North magnetic pole was once the South magnetic pole, and the present South magnetic pole was once the North magnetic pole. A record of these changes is preserved in the igneous rocks that formed at mid-ocean ridges and moved away from the ridges.

The diagram below represents the pattern of normal and reversed magnetic polarity in the igneous rocks composing the ocean crust on the east side of a mid-ocean ridge.

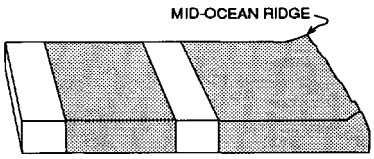


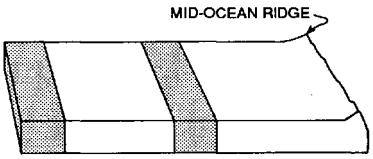
? The igneous material along this mid-ocean ridge was found to be younger than the igneous material farther from the ridge. This fact supports the theory of

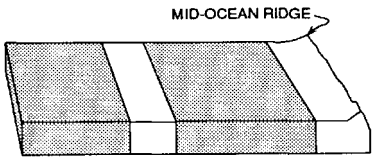
1) crustal subsidence
2) seafloor spreading
3) superposition
4) dynamic equilibrium

Hint

? Which diagram below best shows the pattern of normal and reversed polarity on the west side of the mid-ocean ridge?

1)


2)


3)


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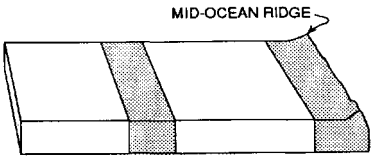

Hint