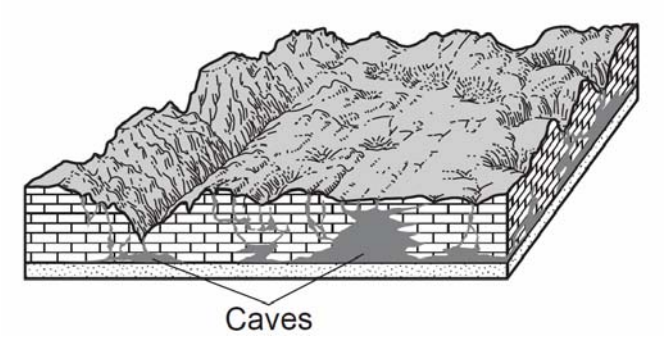
1. Impact craters are more obvious on the Moon and Mercury than on Earth because

   A) meteorites have not struck Earth
   B) weathering processes on Earth have removed most craters
   C) Earth is younger than Mercury or the Moon
   D) all meteorites burn up in Earth's atmosphere

2. Which property of water makes frost action a common and effective form of weathering?

   A) Water dissolves many earth materials.
   B) Water expands when it freezes.
   C) Water cools the surroundings when it evaporates.
   D) Water loses 334 Joules of heat per gram when it freezes.

3. The block diagram below represents caves that developed in a region over time.



   Which type of weathering was primarily responsible for the development of these caves?

   A) physical weathering of sandstone
   B) physical weathering of limestone
   C) chemical weathering of sandstone
   D) chemical weathering of limestone

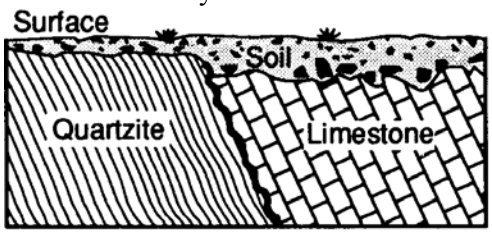
4. Adding automobile exhaust gases to the atmosphere has had the greatest impact on landscape development by

   A) changing the position of crustal plates
   B) changing Earth's prevailing wind patterns
   C) increasing the rate of chemical weathering
   D) increasing the amount of ozone in ground water

5. A large, scratched boulder is found in a mixture of unsorted, smaller sediments forming a hill in central New Jersey. Which agent of erosion most likely transported and then deposited this boulder?

   A) wind B) a glacier
   C) ocean waves D) running water

6. The cross section below shows residual soils that developed on rock outcrops of metamorphic quartzite and sedimentary limestone.



   Which statement best explains why the soil is thicker above the limestone than it is above the quartzite?

   A) The quartzite formed from molten magma.
   B) The limestone is thicker than the quartzite.
   C) The quartzite is older than the limestone.
   D) The limestone is less resistant to weathering than the quartzite.

7. The data table below gives information about four samples of limestone particles. Each sample has a total mass of 1 kilogram. The particles in each sample are of uniform diameter.

Data Table

Sample	Particle Diameter (cm)
A	2.20
B	0.40
C	0.20
D	0.10

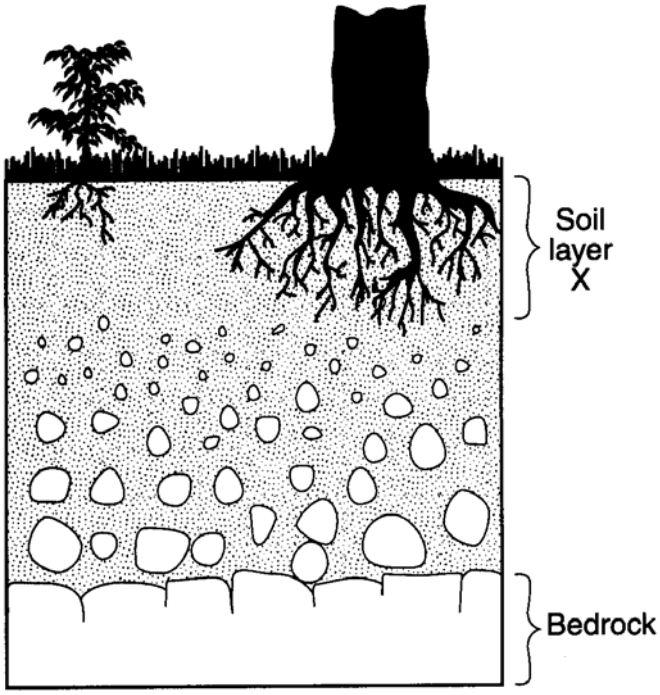
   Which sample would dissolve at the fastest rate when placed in a container of dilute hydrochloric acid?

   A) *A* B) *B* C) *C* D) *D*

8. Sandstone, limestone, and conglomerate cobbles are found in a streambed in New York State where the surrounding bedrock is composed of shales and siltstones. The most likely explanation for the presence of these cobbles is that they were

   A) weathered from the surrounding bedrock
   B) formed when shale and siltstone bedrock were eroded
   C) transported to this area from another region
   D) metamorphosed from shale and siltstone

9. The cross section below shows soil layer *X*, which was formed from underlying bedrock.



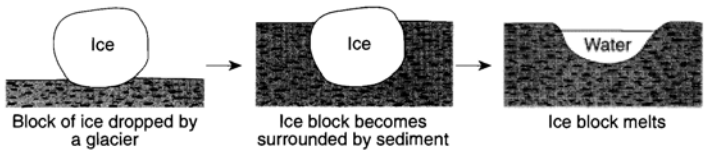
Which change would most likely cause soil layer to increase in thickness?

A) a decrease in slope
B) a decrease in rainfall
C) an increase in biologic activity
D) an increase in air pressure

10. Which statement identifies a result of glaciation that has had a positive effect on the economy of Connecticut?

A) Large amounts of oil and natural gas were formed.
B) The number of usable water reservoirs was reduced.
C) Many deposits of sand and gravel were formed.
D) Deposits of fertile soil were removed.

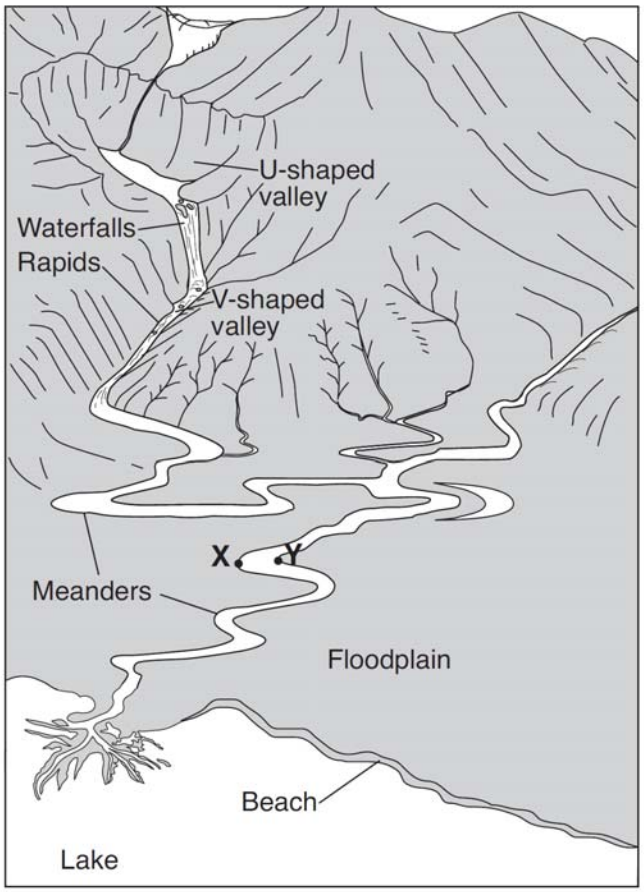
11. The diagram below shows a glacial landscape feature forming over time from a melting block of ice.



This glacial landscape feature is best identified as

A) a kettle lake
B) an outwash plain
C) a finger lake
D) a moraine

Base your answers to questions **12** through **14** on the diagram below, which shows several different landscape features. Points *X* and *Y* indicate locations on the streambank.



12. Explain why the stream meanders on the floodplain, but *not* in the mountains.

13. Identify which point, *X* or *Y*, has more stream erosion and explain why the amounts of erosion are different.

14. Explain why the upper valley in the mountains is U-shaped and the lower valley is V-shaped.

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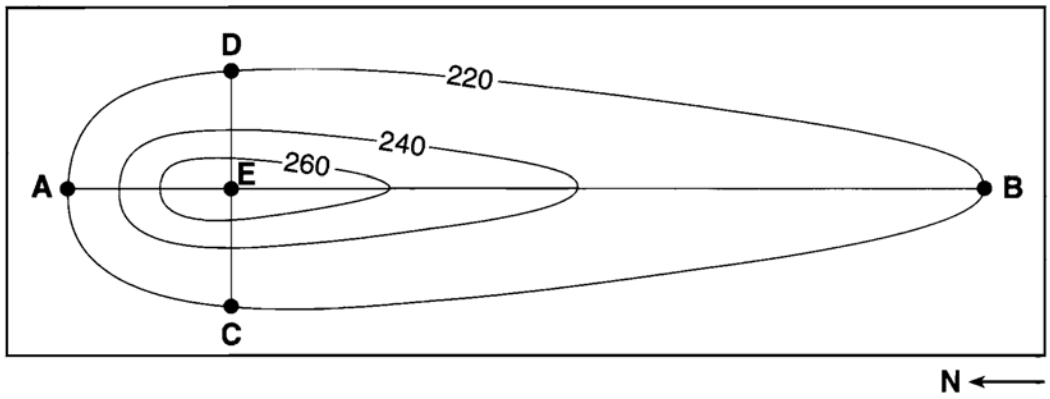
15. Which geologic evidence best supports the inference that a continental ice sheet once covered most of New York State?

A) polished and smooth pebbles; meandering rivers; V-shaped valleys
B) scratched and polished bedrock; unsorted gravel deposits; transported boulders
C) sand and silt beaches; giant swamps; marine fossils found on mountaintops
D) basaltic bedrock; folded, faulted, and tilted rock structures; lava flows

Base your answers to questions **16** and **17** on the contour map below, which shows a hill formed by glacial deposition near Rochester, New York. Letters *A* through *E* are reference points. Elevations are in feet.

Contour Map



16. Which set of characteristics most likely describes the sediment in this glacial deposit?

A) sorted and layered
B) sorted and not layered
C) unsorted and not layered
D) unsorted and layered

17. This glacial deposit is best identified as

A) a V-shaped valley
B) a sand dune
C) a drumlin
D) an outwash plain

18. The photograph below shows scratched and polished bedrock produced by weathering and erosion.

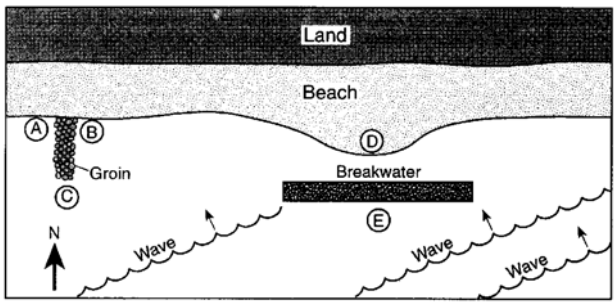
Which agent of eosion most likely carried sediment that scratched and polished this bedrock surface?

A) a moving glacier
B) running water
C) wave action
D) wind

19. Which natural agent of erosion is mainly responsible for the formation of the barrier islands along the southern coast of Long Island, New York?

A) mass movement
B) running water
C) prevailing winds
D) ocean waves

20. Base your answer to the following question on the diagram below, which shows ocean waves approaching a shoreline. A groin (a short wall of rocks perpendicular to the shoreline) and a breakwater (an offshore structure) have been constructed alone the beach. Letters *A*, *B*, *C*, *D*, and *E* represent locations in the area.



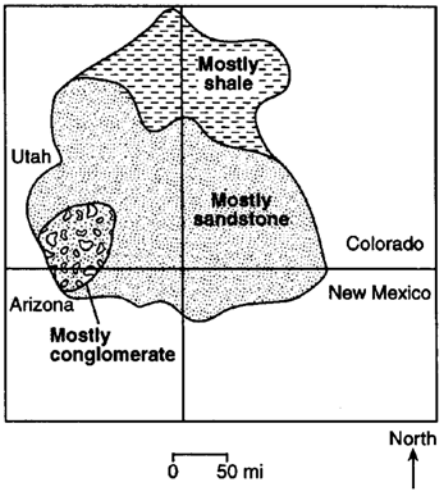
At which location will the beach first begin to widen due to sand deposition?

A) *A*
B) *B*
C) *C*
D) *E*

21. Dynamic equilibrium between erosion and deposition in a river exists when the amount of deposition is

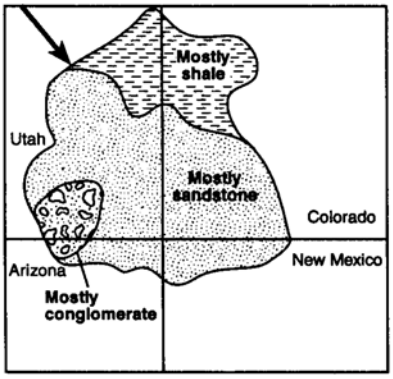
A) less than the amount of erosion
B) greater than the amount of erosion
C) the same as the amount of erosion

22. The map below shows the surface bedrock in an area of the southwestern United States that formed from sediments deposited in a shallow sea that formerly existed in that area. These sediments were transported by a river that flowed into the sea.

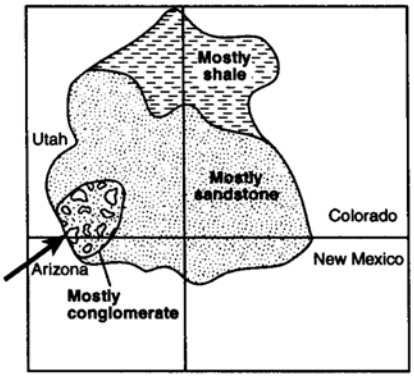


In which diagram does the arrow best show the direction of flow of the river that deposited these sediments and the point at which the river emptied into the sea?

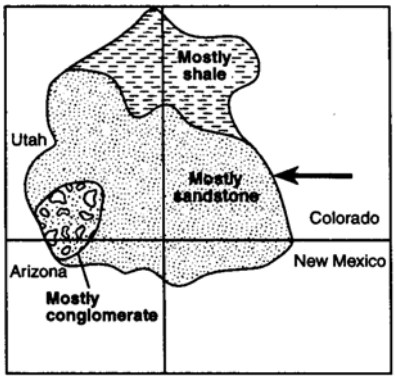
A)



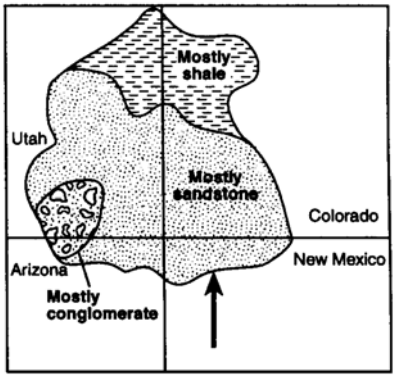
B)



C)



D)



23. A sedimentary deposit produced by wind erosion is most likely composed of

A) sorted fine-grained particles in cross-bedded layers
B) a range of particle sizes from 1.0 to 10.0 cm in diameter in thick layers
C) flat, angular boulders in unsorted piles
D) shells of varying size, shape, and composition in isolated mounds

24. Which statement best describes sediments deposited by glaciers and rivers?

A) Glacial deposits and river deposits are both sorted.
B) Glacial deposits are sorted, and river deposits are unsorted.
C) Glacial deposits are unsorted, and river deposits are sorted.
D) Glacial deposits and river deposits are both unsorted.

Answer Key
Topic 9 and10 in class review

1. B
2. B
3. D
4. C
5. B
6. D
7. D
8. C
9. C
10. C
11. A
12. — The stream began to flow over a nearly flat landscape. — Stream velocity decreased. — Gradient decreases from the mountains to the floodplain. — The stream flows more slowly on the floodplain.— The floodplain is composed of loose sediment.
13. — Point *X is on the outside of a meander curve. — Stream velocity is greater at point X. — More deposition occurs at Y.*
14. U-shaped: — It was eroded by glaciers. — A glacier formed the valley. — formed by glacial ice
V-shaped: — Running water cut the V-shaped valley. — A stream formed the valley.
15. B
16. C
17. C
18. A
19. D
20. B
21. C
22. B
23. A
24. C