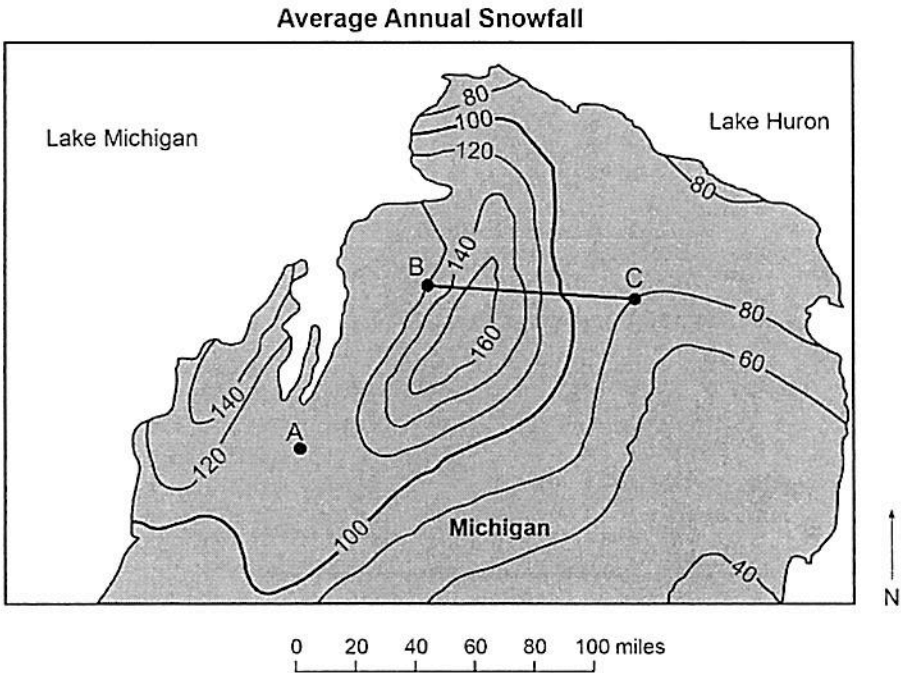
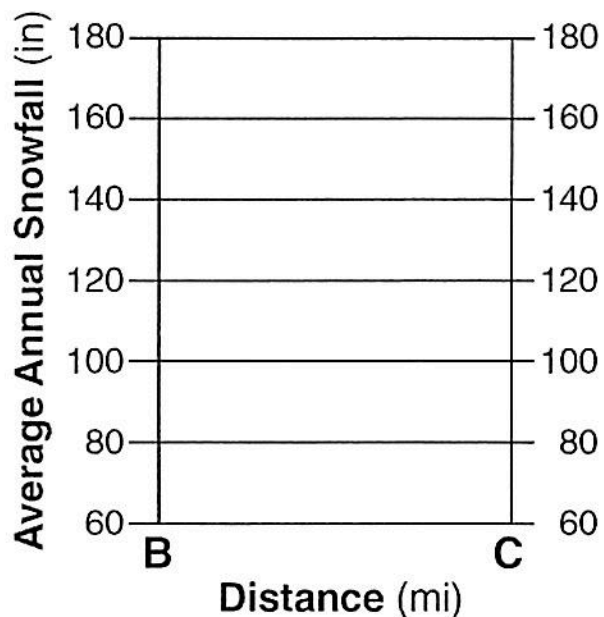


Base your answers to questions 1 and 2 on the maps below and on your knowledge of Earth science. The snowfall map shows isolines of average annual snowfall, measured in inches, across part of Michigan between two of the Great Lakes. Letters A through C represent locations on Earth's surface. The snowfall map is an enlargement of the map area outlined on the following Great Lakes regional map.

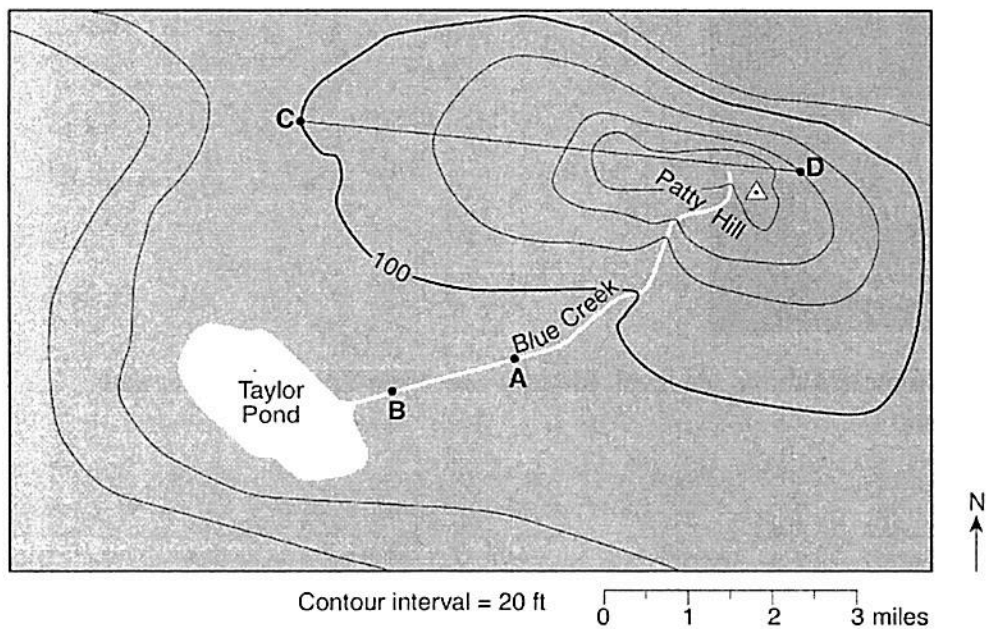


1. The surface elevation of Lake Huron is 176 meters above sea level. Identify *one* New York State river that receives water that flows from Lake Huron.

2. On the grid, construct a profile of the average annual snowfall along line *BC* by plotting the value of *each* isoline that crosses line *BC*. Connect *all eight* plots with a line to complete the profile.



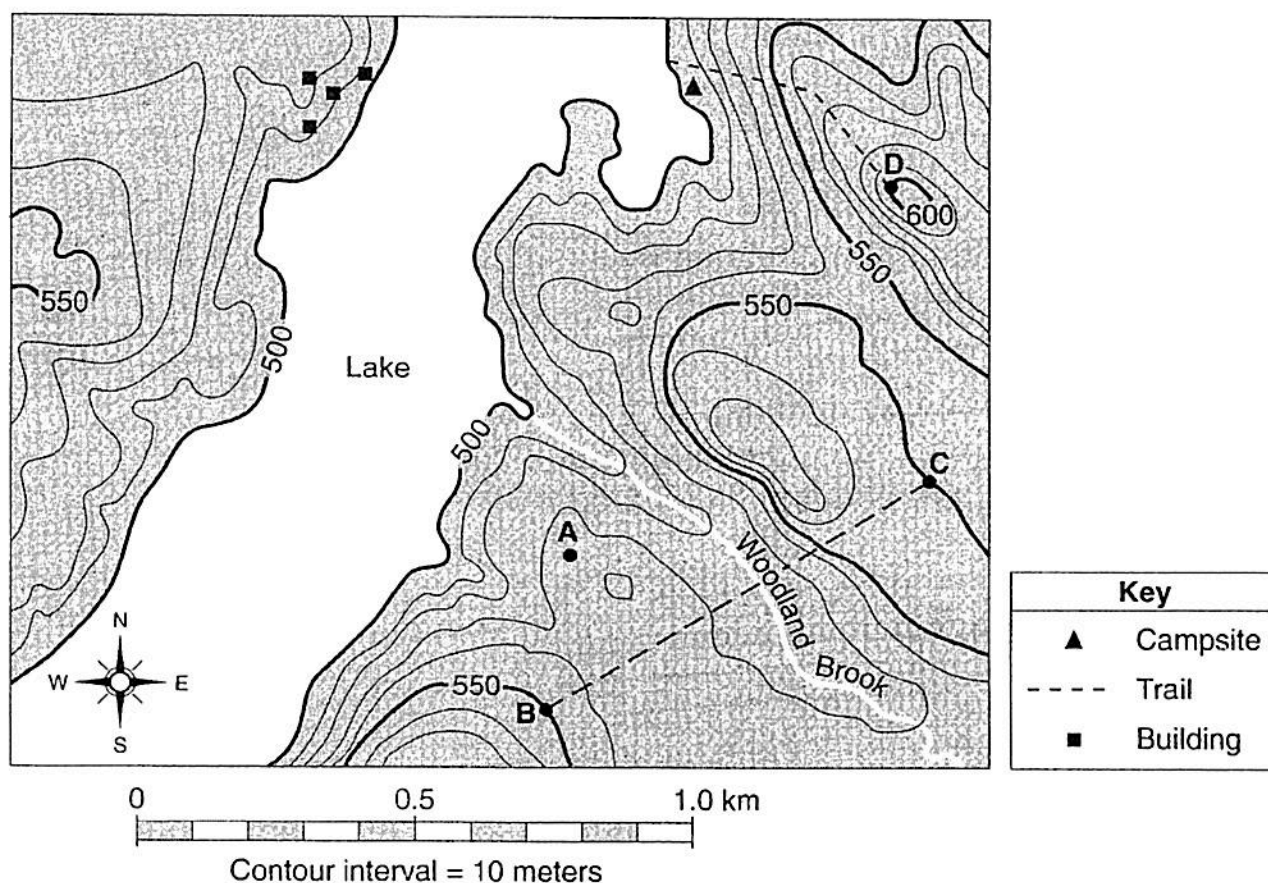
Base your answers to questions 3 and 4 on the topographic map shown below. Letters *A*, *B*, *C*, and *D* represent locations on Earth's surface. The triangular symbol marks the highest elevation on Patty Hill. Elevations are shown in feet.



3. A student placed a floating wooden block in Blue Creek at location *A*. Fifteen minutes later, the floating block arrived at location *B*. What was the creek's rate of flow from *A* to *B*? Express your answer to the *nearest tenth*.

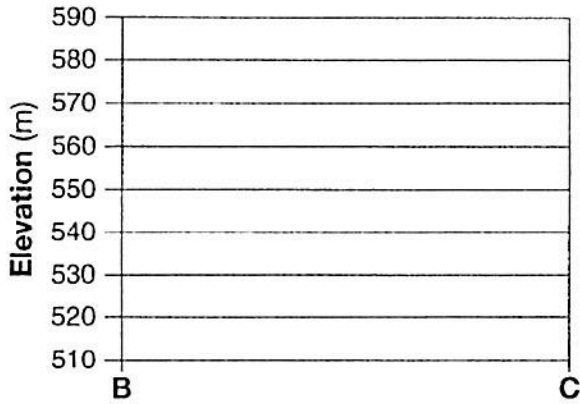
4. Explain how the shape of the contour lines crossing Blue Creek shows the direction that the creek is flowing.

Base your answers to questions 5 through 8 on your knowledge of Earth science. The map shows an area of New York State that includes a lake, a campsite, a trail, and buildings near a lake. Points A, B, C, and D represent locations on the map.



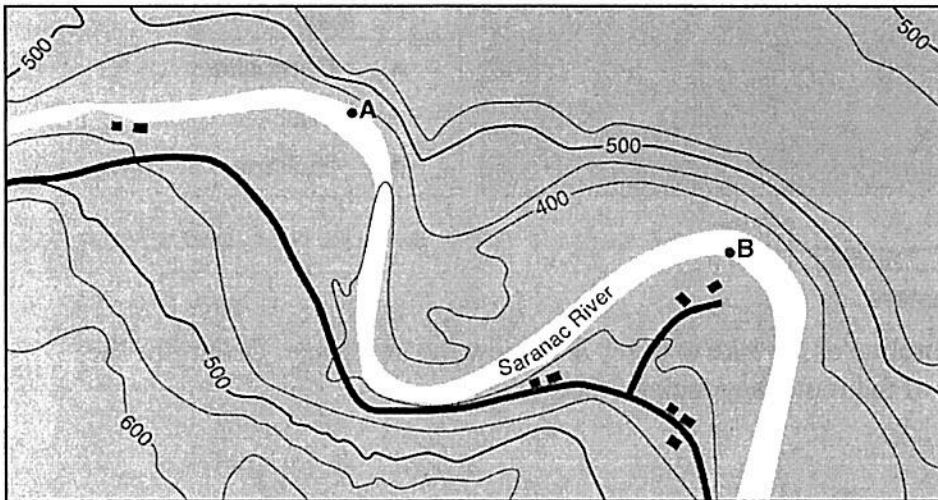
5. Campers hiked along the trail from the shoreline of the lake to point D to view the landscape. Determine the average gradient, in meters per kilometer, of the route they took on their hike.
6. Circle the phrase that indicates the direction of flow of Woodland Brook. Describe the contour-line evidence that supports your answer.

7. On the grid, construct a topographic profile along line *BC*. Plot the elevation of each contour line that crosses line *BC*. Connect all seven plots with a line to complete the profile.



8. Point *A* on the topographic map indicates a certain elevation on the east side of the lake. Place an **X** at the same elevation on the west side of the lake.

Base your answers to questions 9 and 10 on the topographic map below, which shows an area of the Saranac River just west of Plattsburgh, New York. Points *A* and *B* are locations in the river.



Key	
— Road	■ Building

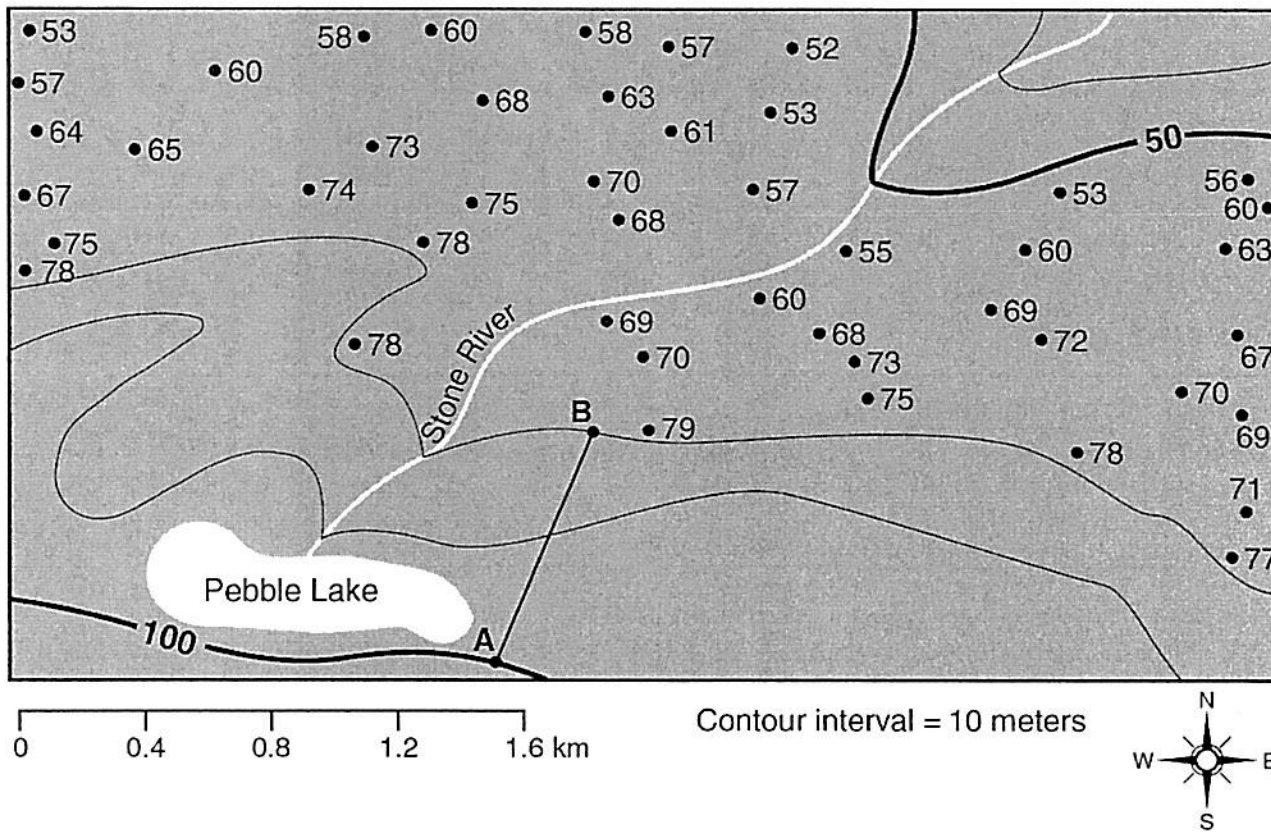
Contour interval = 50 ft



9. In this region of the Saranac River, the land area that is lower in elevation than 450 feet is a floodplain. On the map above, draw a diagonal-line pattern to indicate the entire floodplain area.

10. Identify *one* emergency preparedness activity that people living in the floodplain area can take to protect themselves and their property from possible flooding.

Base your answers to questions 11 through 13 on the topographic map below and on your knowledge of Earth science. Some contour lines have been drawn. Line *AB* is a reference line on the map.



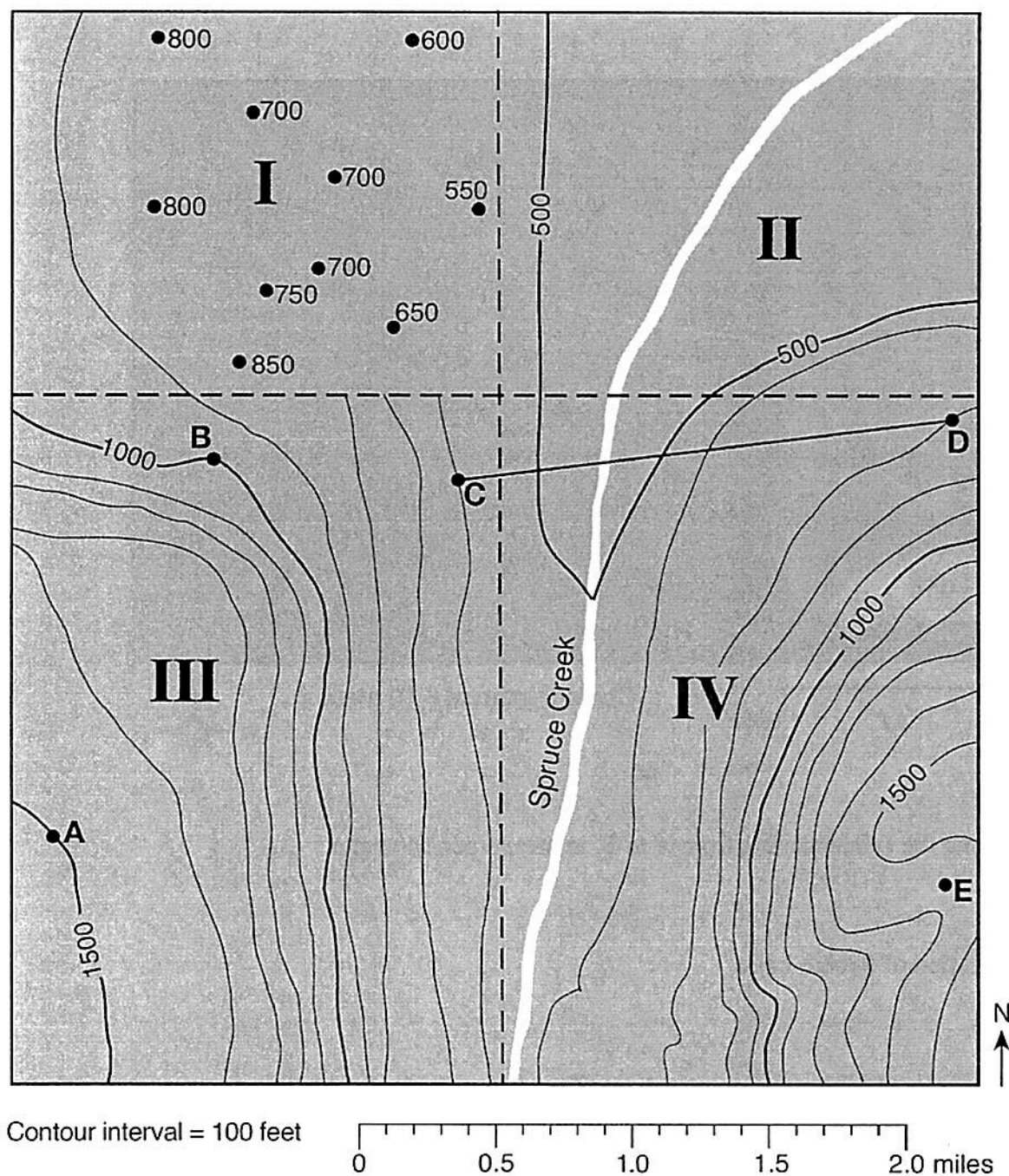
- 11 Calculate the gradient along the reference line from *A* to *B*, in meters per kilometer.

- 12 State a likely surface elevation of Pebble Lake.

- 13 On the map, draw the 60-meter and 70-meter contour lines. The contour lines should extend to the edges of the map.



Base your answers to questions 14 through 18 on the topographic map and on your knowledge of Earth science. Dashed lines separate the map into sections I, II, III, and IV. Letters *A* through *E* represent locations on Earth's surface. The points in section I represent elevations in feet.



14. Calculate the gradient between locations *A* and *B*.

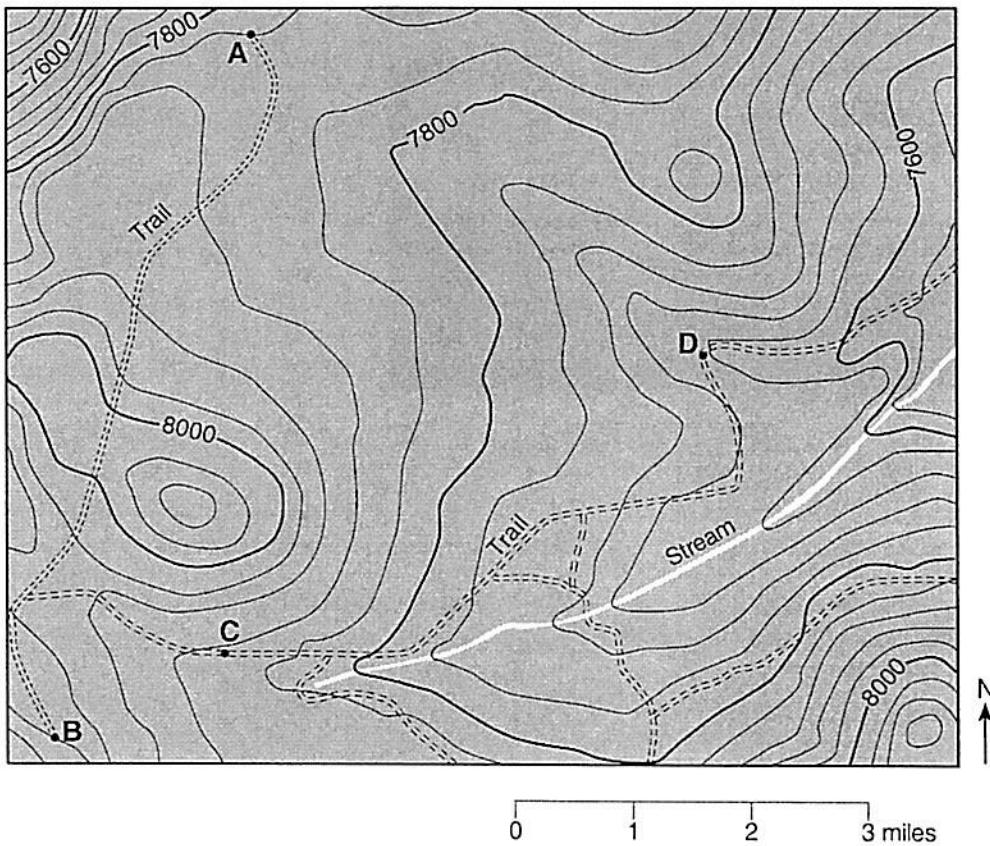
15. What is a possible elevation of location *E*?

16. Describe how the topography within section II is different from the topography within section IV.

17. On the map draw a line showing the most likely path of a second creek that begins at location *E* and flows into Spruce Creek.

18. On the map complete the 600-ft, 700-ft, and 800-ft contour lines in section I. Extend the lines to the edge of the map.

Base your answers to questions 19 through 21 on the topographic map below. Letters *A* through *D* represent locations on the map. Elevations are measured in feet. Dashed lines represent trails.



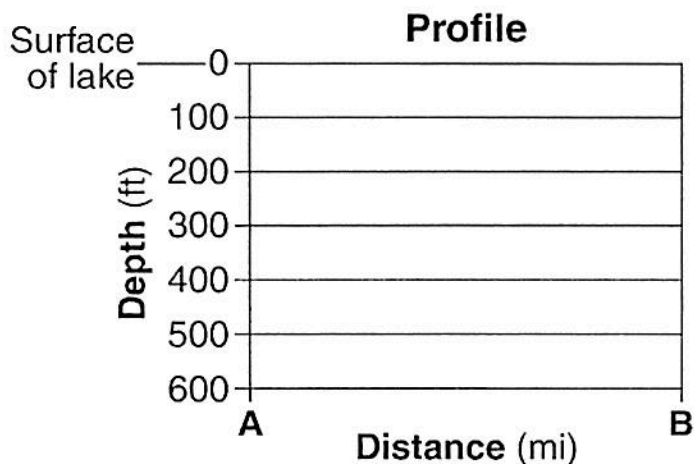
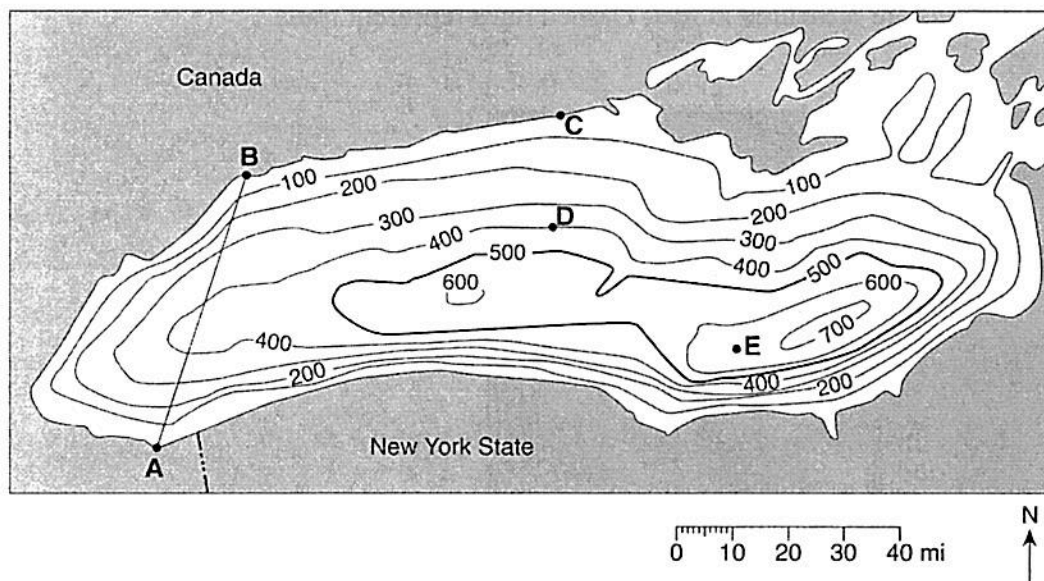
19. How long will it take a person to hike along the trail from point *C* to point *D* at a rate of 3 miles per hour?

20. Identify the contour interval used on this map.

21. On the map, first draw an arrow on the stream to show the direction in which the stream is flowing. Then state *one* piece of evidence shown on the map that supports the direction of the arrow you drew on the stream.

Base your answers to questions 22 through 24 on the field map below and on your knowledge of Earth science. The map shows the depth of Lake Ontario. Isoline values indicate water depth, in feet. Points *A*, *B*, and *C* represent locations on the shoreline of lake Ontario. Points *D* and *E* represent locations on the bottom of the lake.

Water Depth of Lake Ontario



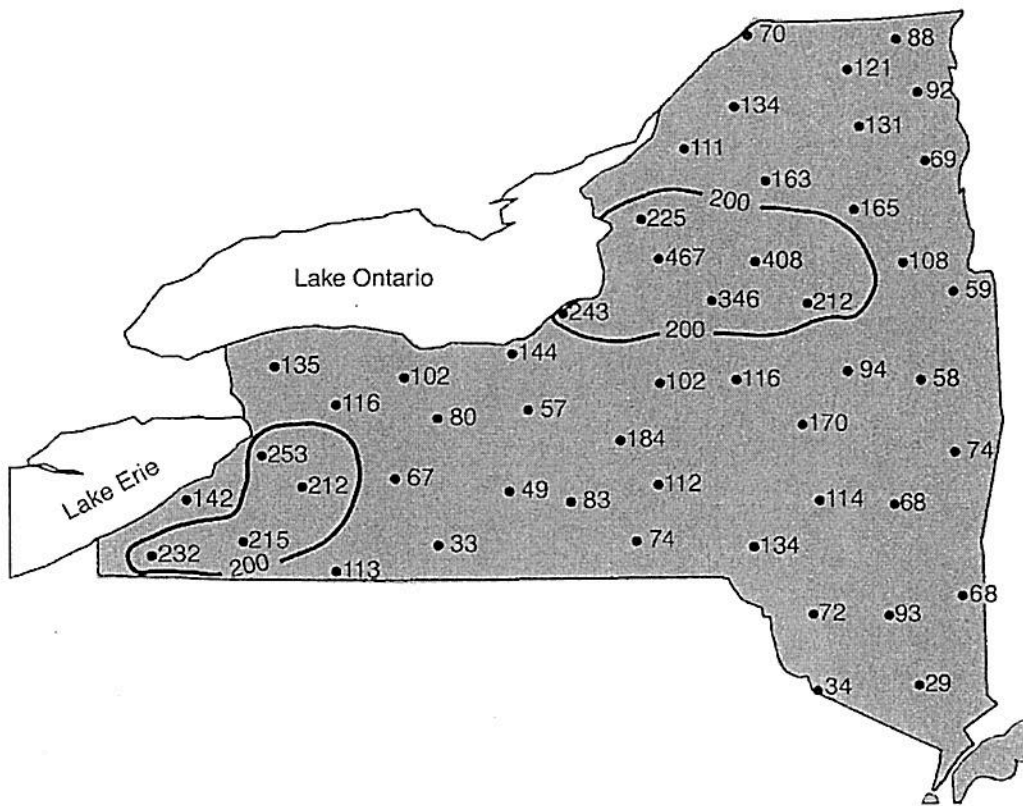
22. What evidence shown on the map indicates that the southern section of the bottom of Lake Ontario has the steepest slope?



23. What is a possible depth of the water at location *E*?

24. On the grid above, draw a profile of the bottom of western Lake Ontario by plotting the depth of the water along line *AB*. Plot *each* point where an isoline showing depth is crossed by line *AB*. Connect the plots with a line, starting at *A* and ending at *B*, to complete the profile.

25. Base your answer to the following question on the map below, which shows the snowfall from the fall of 1976 through the spring of 1977, measured in inches, for most of New York State. The 200-inch snowfall isolines are shown on the map.



On the map above, draw the 100-inch snowfall isoline. Extend the isoline to the edges of New York State.

