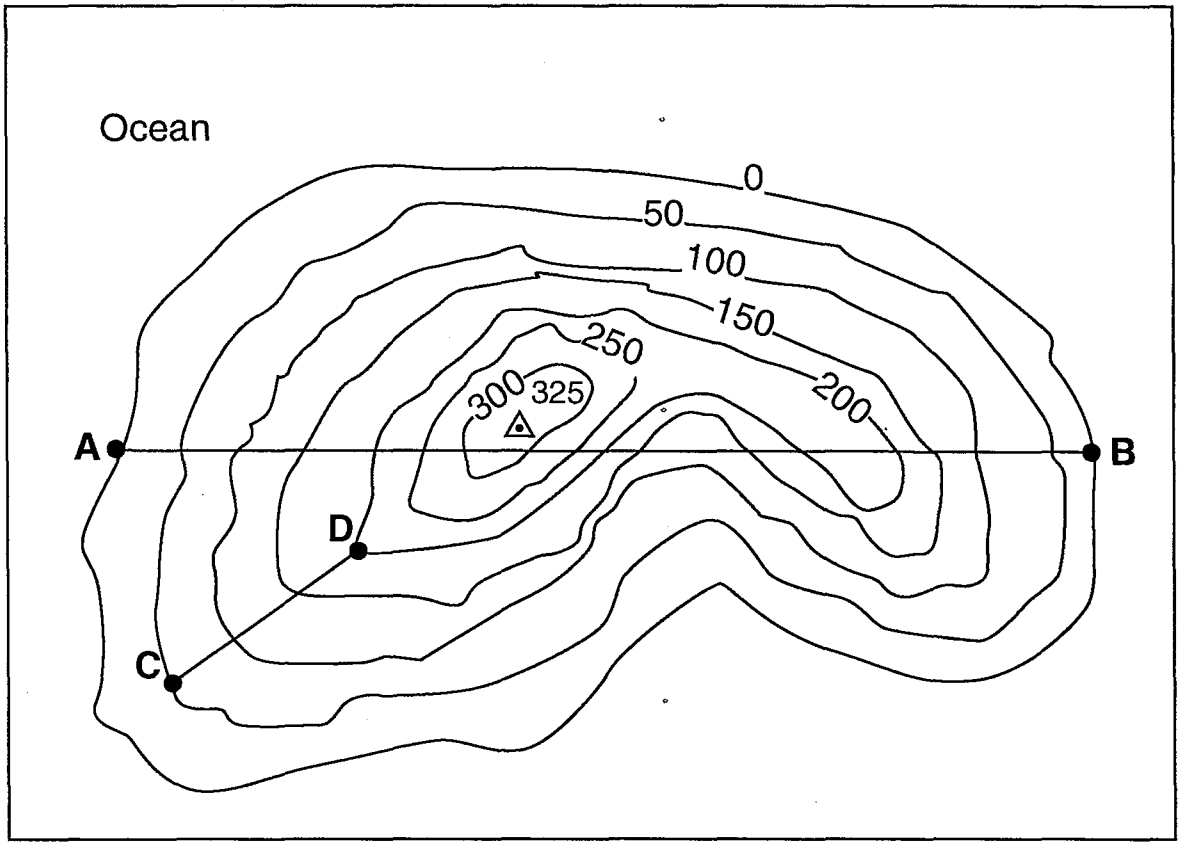
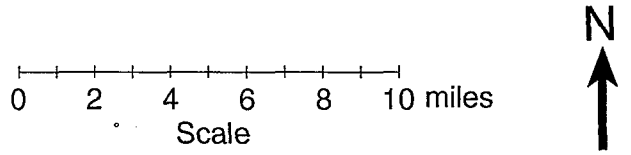
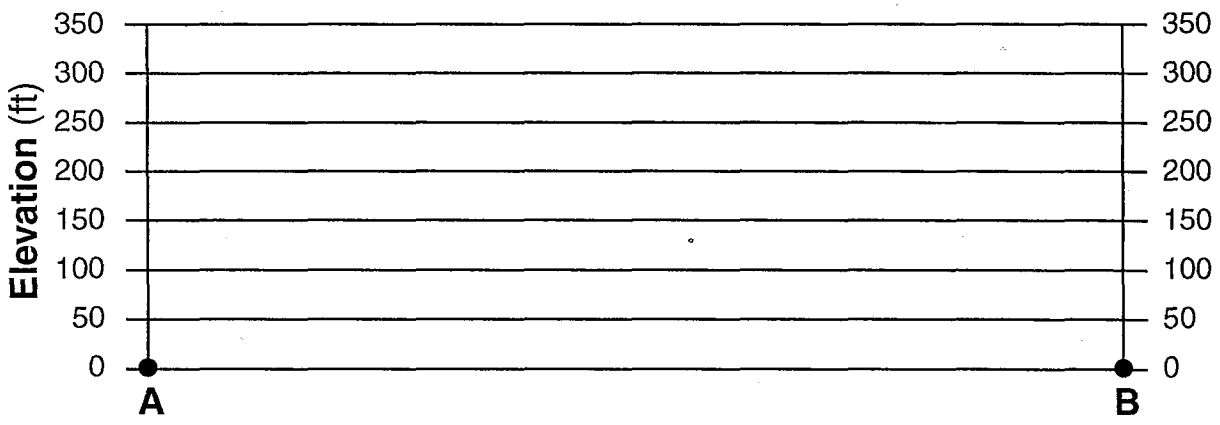
1. Base your answer to the following question on the topographic map of an island shown below. Elevations are expressed in feet. Points *A*, *B*, *C*, and *D* are locations on the island. A triangulation point shows the highest elevation on the island.







On the grid provided above, construct a topographic profile representing the cross-sectional view between point *A* and point *B*, following the directions below.

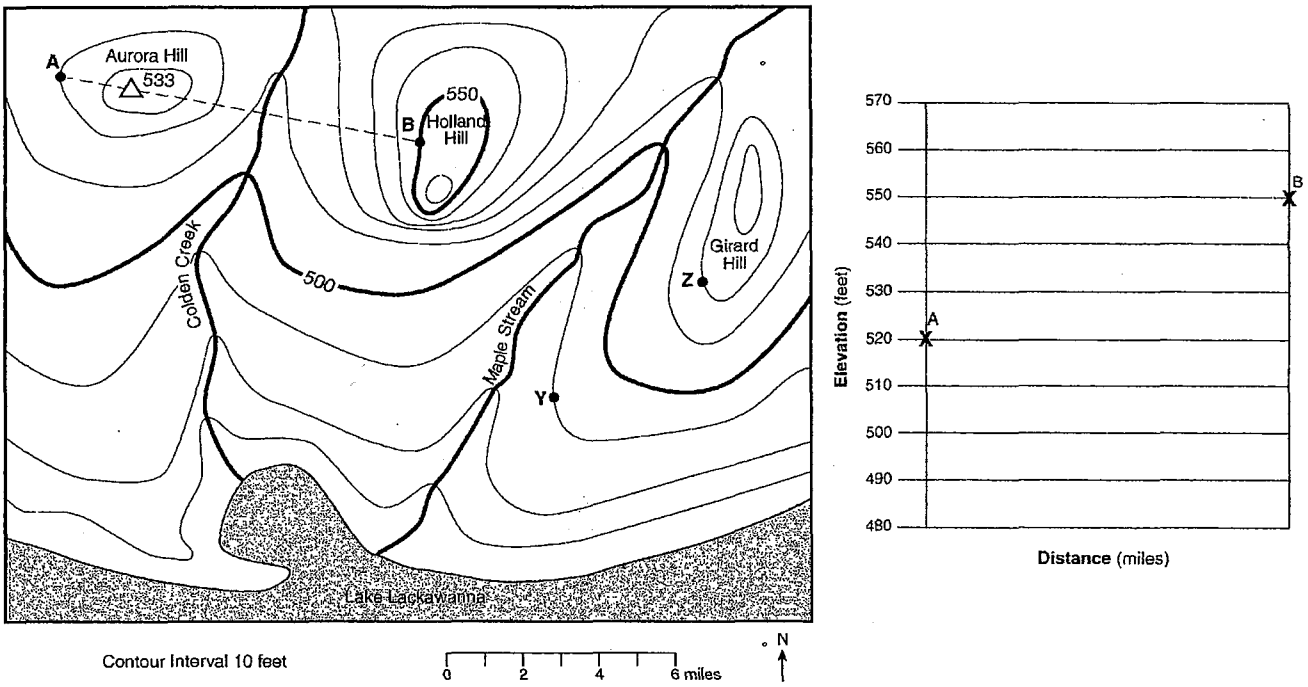
a Plot the elevation of the land along line *AB* by marking, with a dot, the elevation of *each* point where a contour line is crossed by line *AB*.

b Connect the dots with a smooth, curved line to complete the topographic profile.

2. What is the average gradient, in feet per mile, along the straight line from point *C* to point *D*? _____ft/mi

---

Base your answers to questions **3** through **6** on the topographic map below. Points *A, B, Y,* and *Z* are reference points on the topographic map. The symbol Δ533 represents the highest elevation on Aurora Hill.



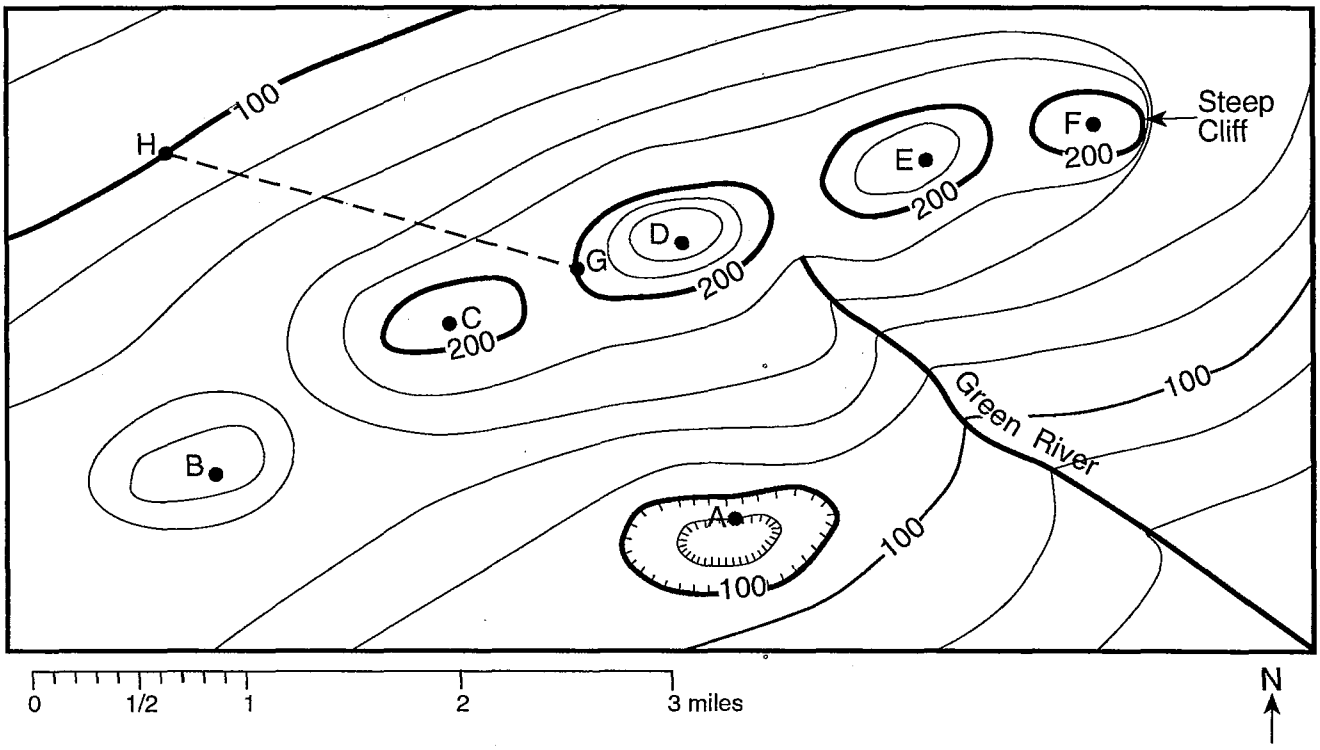
3. State the general compass direction in which Maple Stream is flowing.

4. Calculate the gradient between points *Y* and *Z* on the map, and label the answer with the correct units.

5. Describe the evidence shown on the map that indicates that the southern side of Holland Hill has the steepest slope.

6. On the grid provided,, construct a topographic profile from point *A* to point *B* by following the directions below.
   a Plot the elevation along line *AB* by marking with an *X each* point where a contour line is crossed by line *AB*. Points *A* and *B* have been plotted for you.
   b Complete the profile by correctly connecting the plotted points with a smooth, curved line.

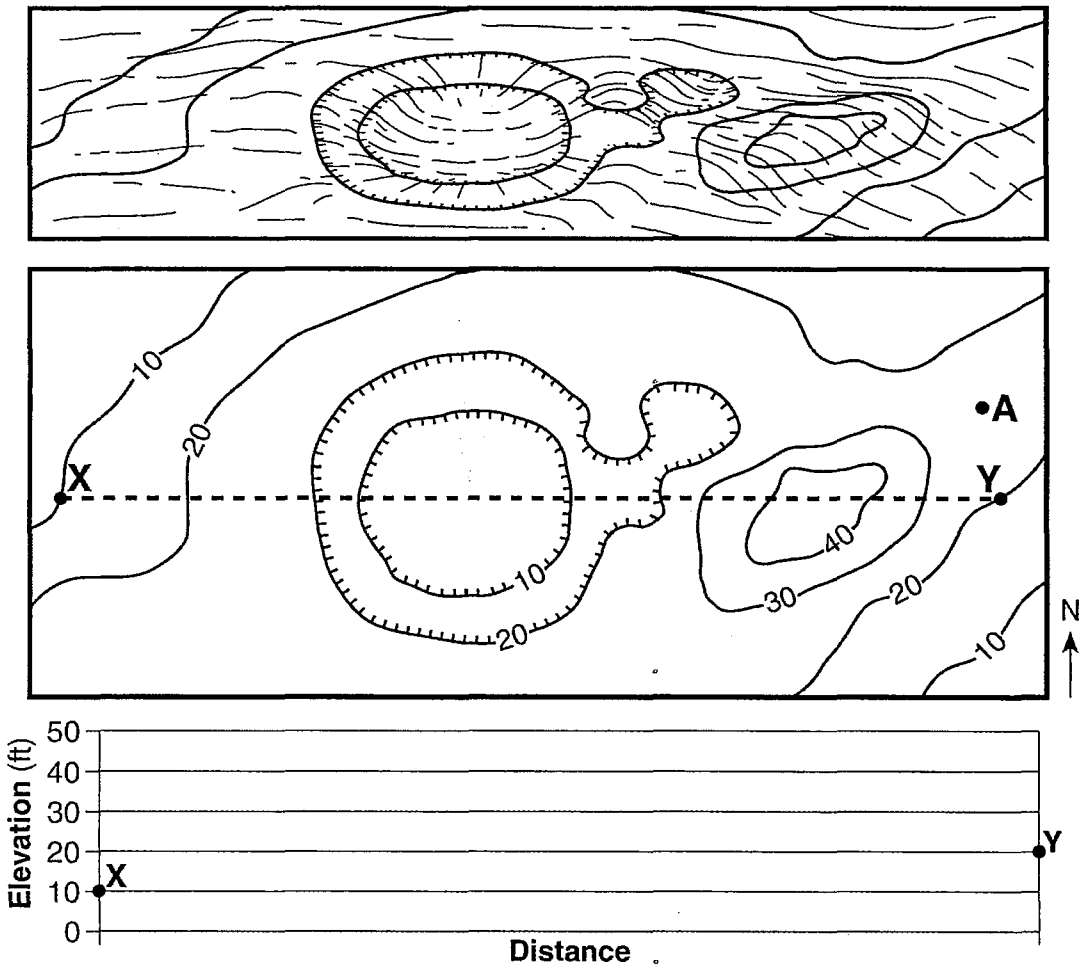
Base your answers to questions **7** and **8** on the contour map below. Letters *A* through *H* represent locations in the area represented by the map. Contour lines are labeled in feet.



7. State how the shape of the contour lines crossing the Green River indicates that this river flows toward the southeast.

8. Which letter represents the highest elevation?

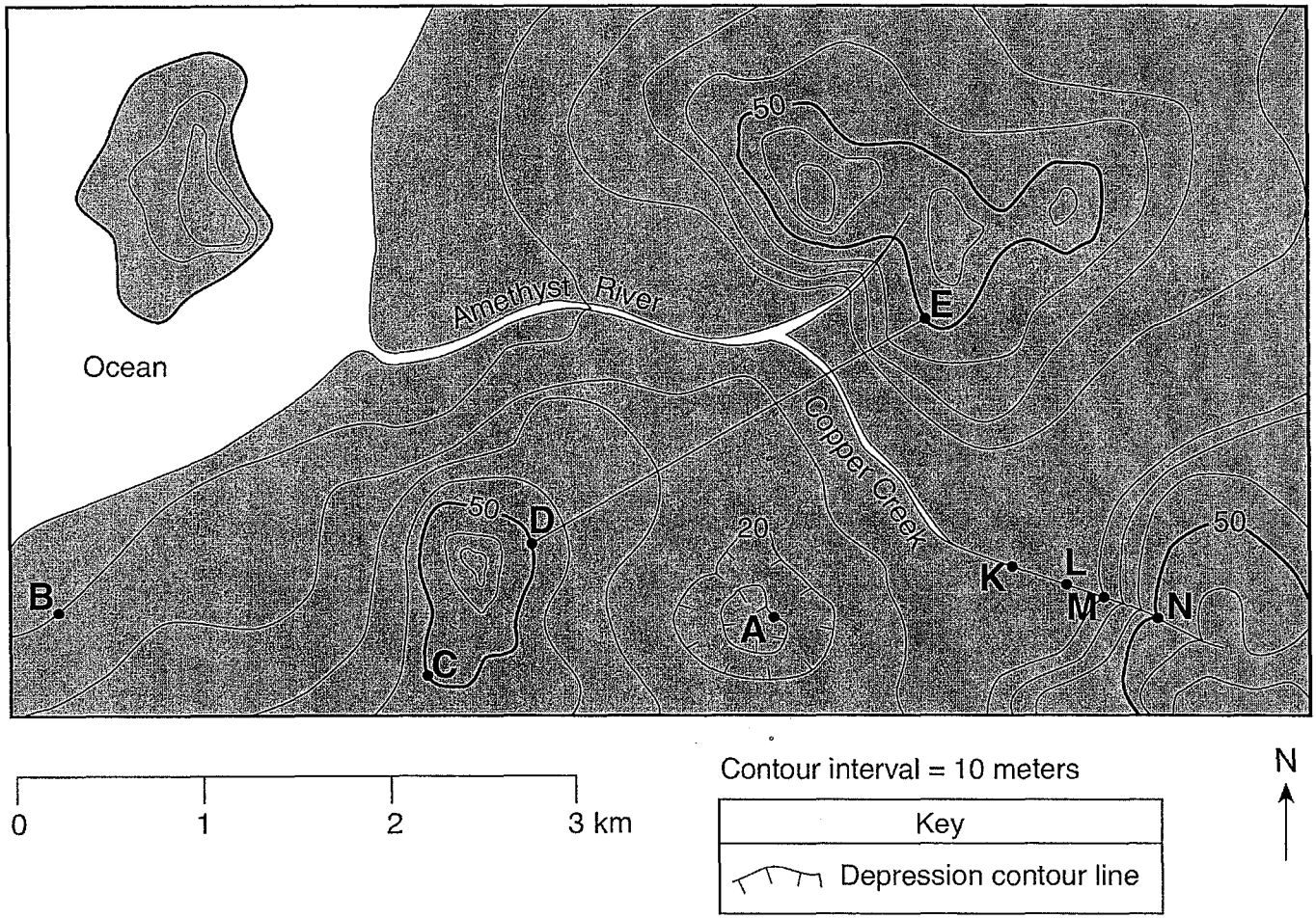
Base your answers to questions **9** and **10** on the diagrams below. The top diagram shows a depression ai hill on a gently sloping area. The bottom diagram is a topographic map of the same area. Points *A,* X, and *Y a* locations on Earth's surface. A dashed line connects points X and *Y.* Elevation is indicated in feet.



9. What is a possible elevation of point *A*?

10. Construct a topographic profile along line *XY* on the grid by plotting a point for the elevation of *each* contour line that crosses line *XY.* Points *X* and *Y* have already been plotted on the grid. Connect the points with a smooth, curved line to complete the profile.

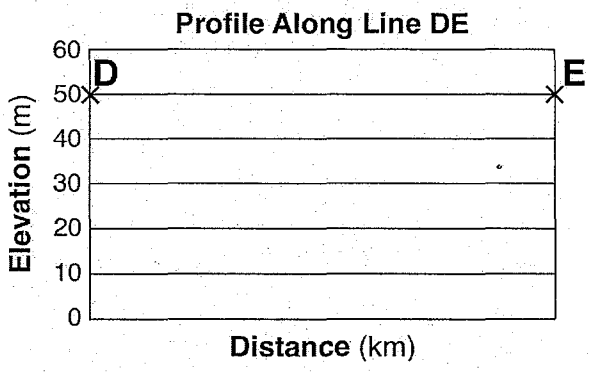
Base your answers to questions **11** through **14** on the topographic map shown below. Letters *A*, *B*, *C*, *D*, and *E* represent locations on Earth's surface. Letters *K*, *L*, *M*, and *N* are locations along Copper Creek. Elevations are measured in meters.



11. What is the elevation of location *A*?

12. Calculate the gradient between points *B* and *C* and label your answer with the correct units.

13. On the grid below, construct a topographic profile along line *DE* by plotting an **X** for the elevation of each contour line that crosses line *DE*. Connect the **X**s with a smooth, curved line to complete the profile.

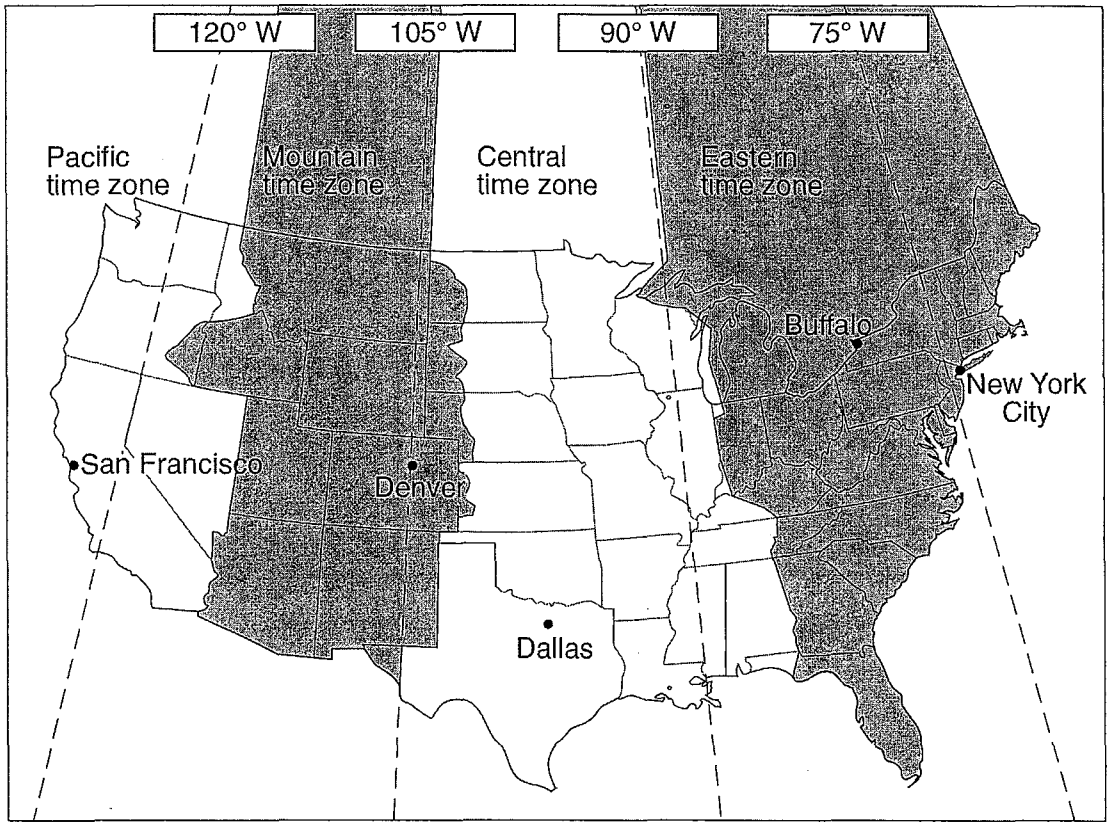


14. Explain how the map indicates that Copper Creek flows faster between points *N* and *M* than between points *L* and *K*.

Base your answers to questions **15** and **16** on passage and time zones map shown below.

Time Zones

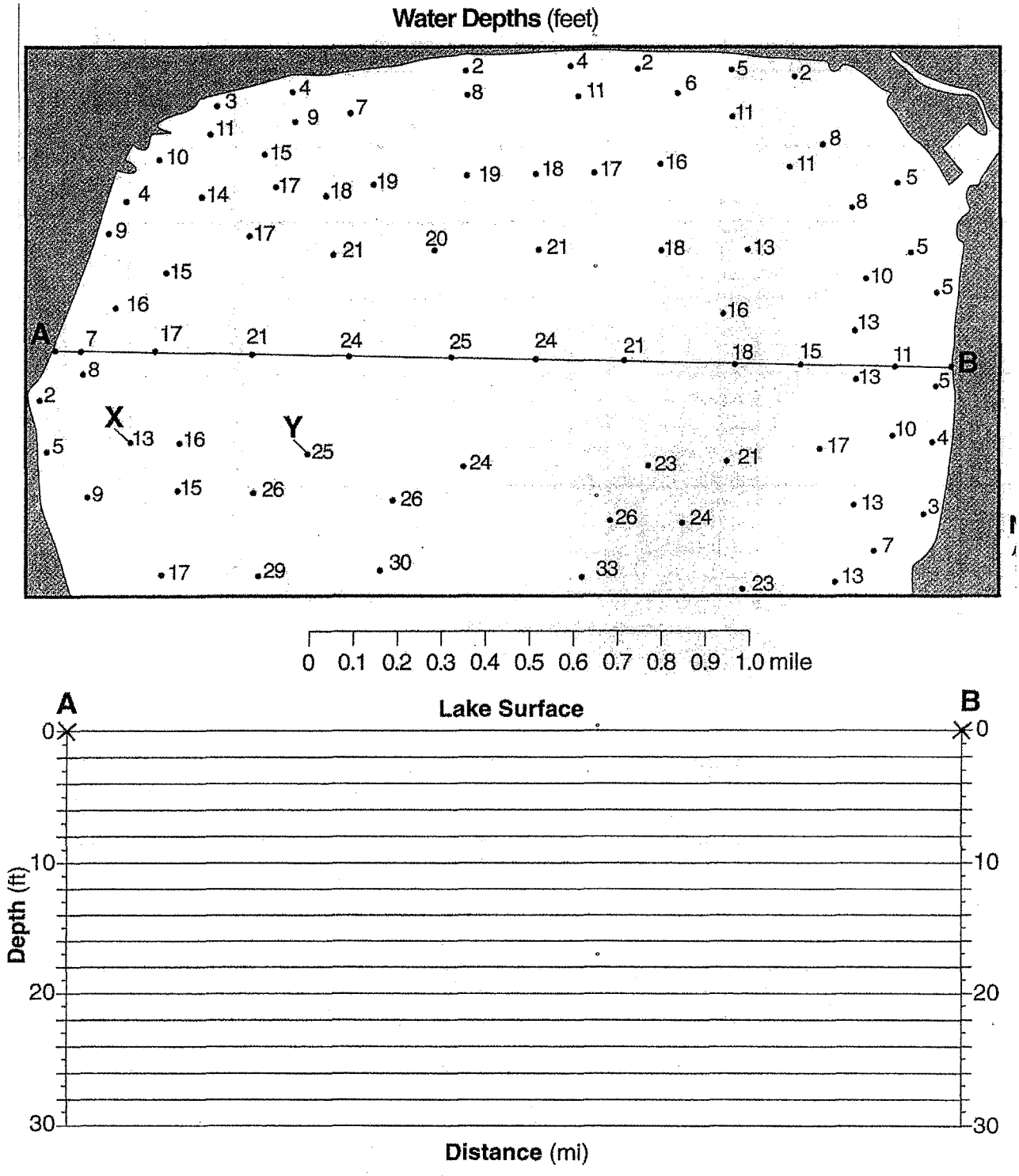
In 1883, Earth was divided into 24 time zones. The United States (excluding Alaska and Hawaii) has four time zones, which are indicated by different shadings on the map.Each zone is roughly centered on lines of longitude that are 15° apart. These lines are shown as dashed lines on the map. Most locations within a time zone have the same time.This time is called standard time. As you move to the west, the time in each zone is one hour earlier than the previous time zone



15. When it is 1 a.m. in New York City, what time is it in Denver?

16. Explain, in terms of Earth's rotation, why the time zones are 15° of longitude apart.

Base your answers to questions **17** and **18** on the map in below. The map shows the water depth, measured in feet, at the north end of the Finger Lakes. Points *A* and *B* are locations at the lake's shoreline. Points *X* and *Y* are locations on the bottom of the lake.

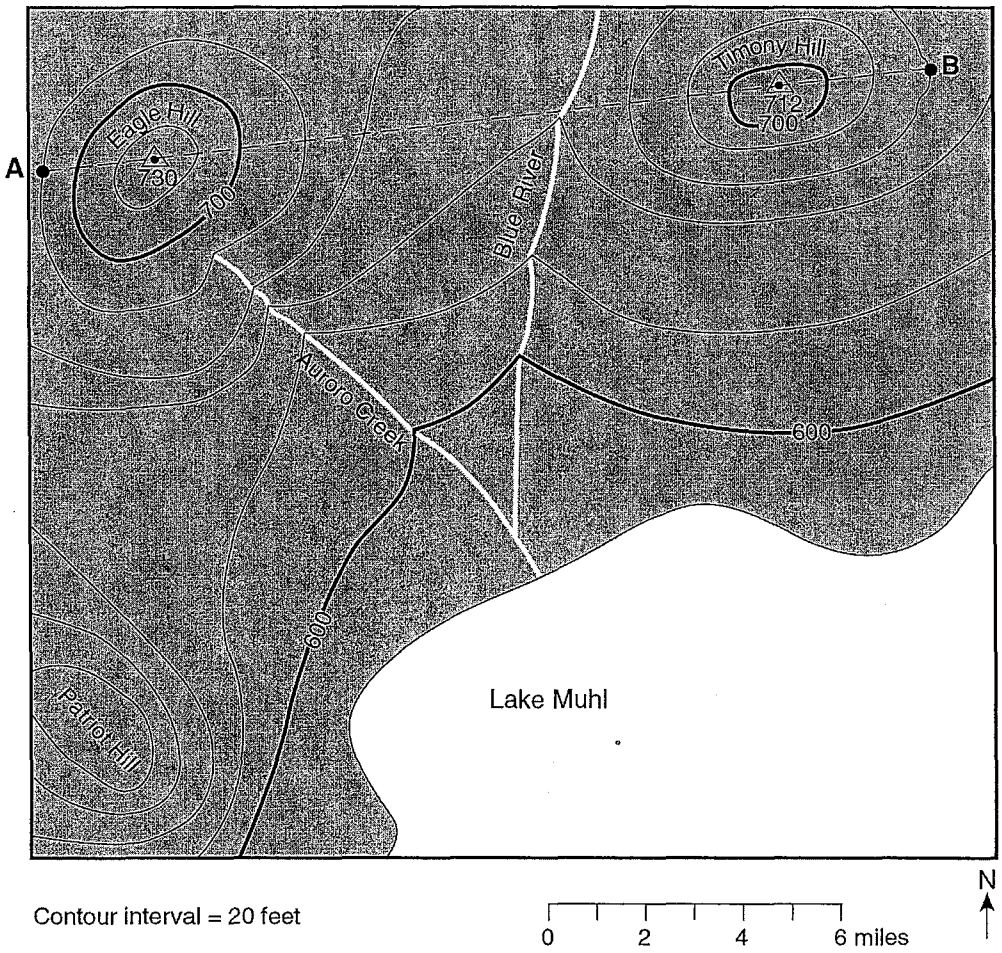


17. On the map above, draw the 20 foot-depth isoline. The isoline must extend to the edge of the map.

18. On the grid above, construct a profile along the line from point *A* to point *B*. Plot the depth along line *AB* by marking an **X** at each numbered point where a water depth is shown. Complete the profile by connecting the **X**s with a smooth, curved line. The **X**s for point *A* and point *B* have been plotted.

Base your answers to questions **19** through **21** on the topographic map below. Points *A* and *B* are reference points on the map. The Δ symbols show the highest elevations on Eagle Hill and Timony Hill. Elevations are shown in feet.

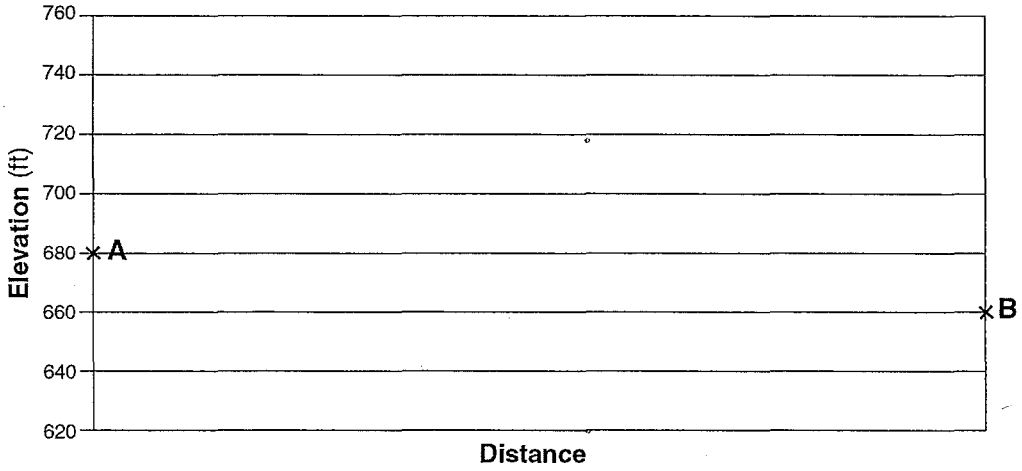
Topographic Map



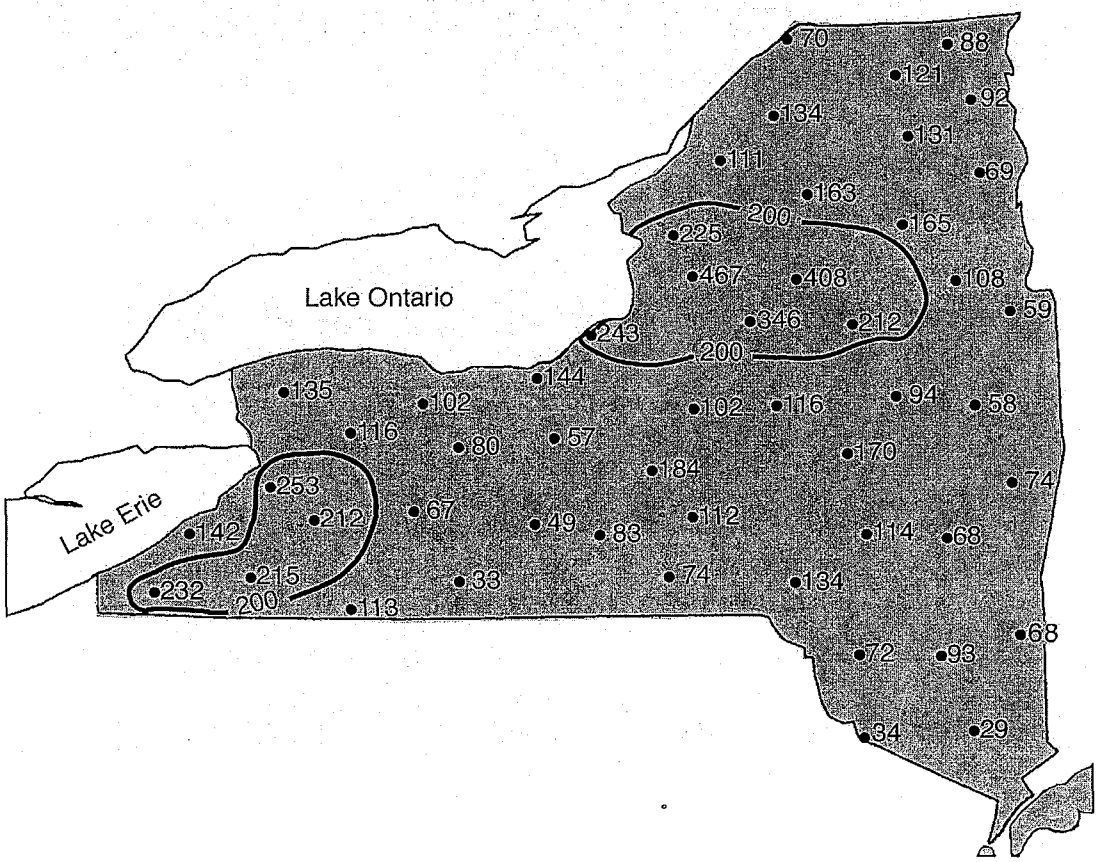
19. Identify the general compass direction toward which Auroro Creek is flowing.

20. State a possible elevation of the top of Patriot Hill.

21. On the grid below, construct a topographic profile along line *AB* by plotting an **X** for the elevation of each contour line that crosses line *AB*. Connect the plotted **X**s with a smooth, curved line to complete the profile. Points *A* and *B* have been plotted.



Base your answers to questions **22** and **23** 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.

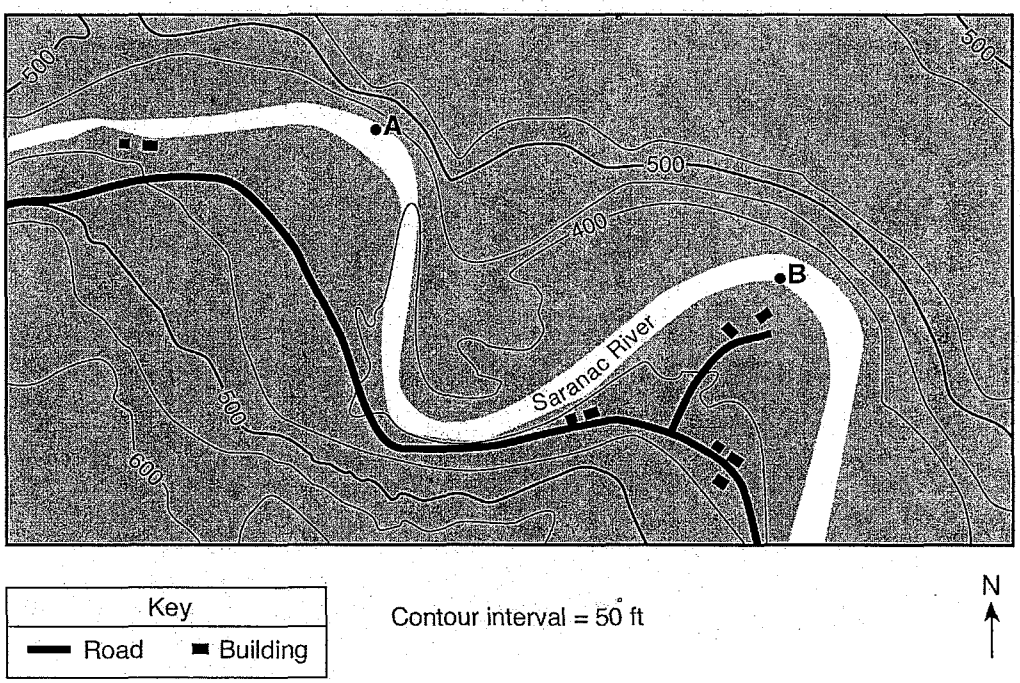


22. On the map above, draw the 100-inch snowfall isoline. Extend the isoline to the edges of New York State.

23. The amount of snowfall for Massena is shown on the map. What was the amount of snowfall for Massena?

_____

Base your answers to questions **24** through **26** 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.

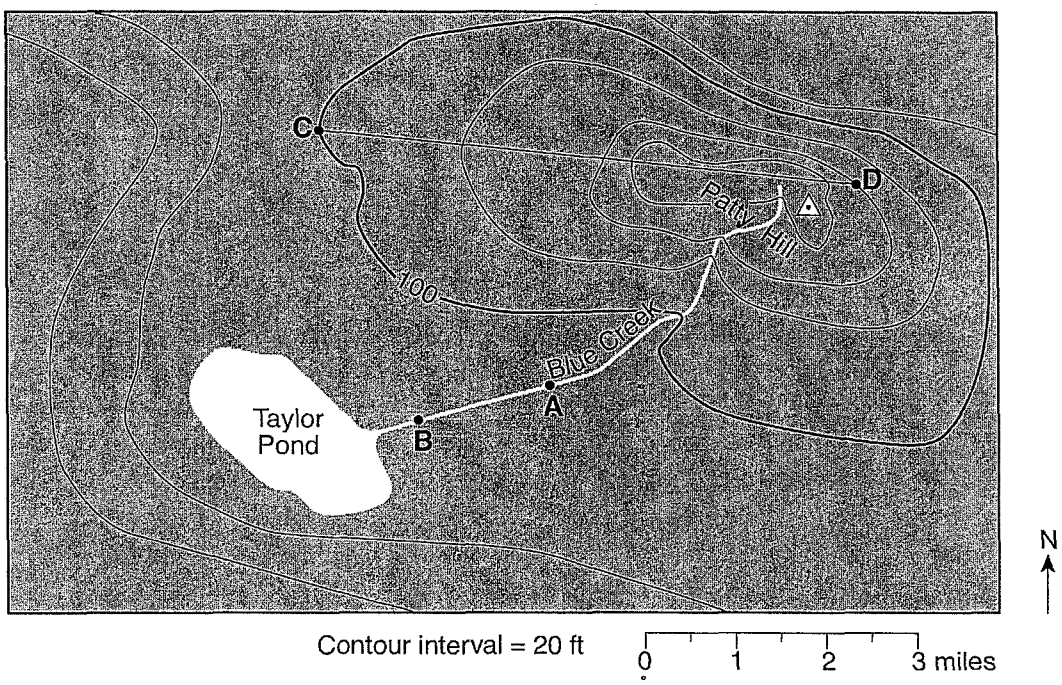


24. In this region of the Saranac River, the land area that is lower in elevation than 450 feet is a floodplain. On the map above, draw a diagonal-line pattern to indicate the entire floodplain area.

25. Describe how the contour lines shown on the map indicate that the Saranac River flows from point *A* to point *B*.

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

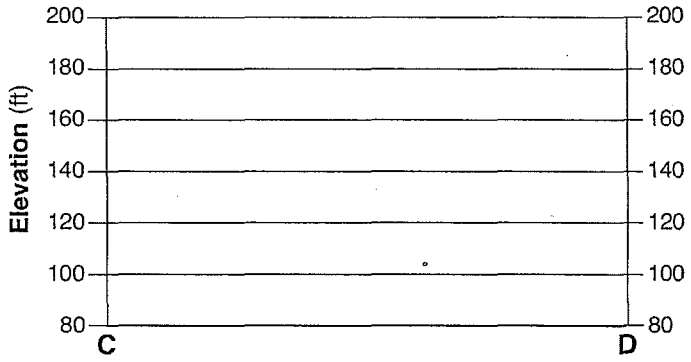
Base your answers to questions **27** through **29** on the topographic map shown below. Letters *A*, *B*, *C*, and *D* represent locations on Earth's surface. The symbol (marks the highest elevation on Patty Hill. Elevations are shown in feet.



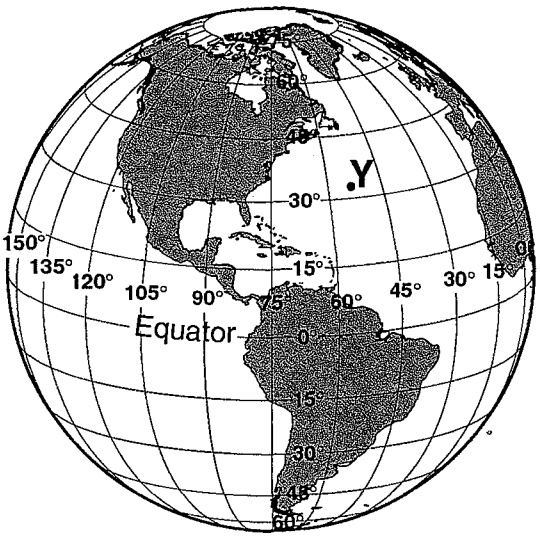
27. What is a possible elevation at the symbol Δ at the top of Patty Hill?

28. Indicate, using a compass direction, the steepest side of Patty Hill.

29. On the grid below, construct a profile of the land surface along line *CD*. Plot the elevation of *each* contour line that crosses line *CD*. Connect the plots with a line to complete the profile.



30. the diagram in your answer booklet, which shows the latitude-longitude grid on a model of Earth. Point *Y* is a location on Earth's surface.

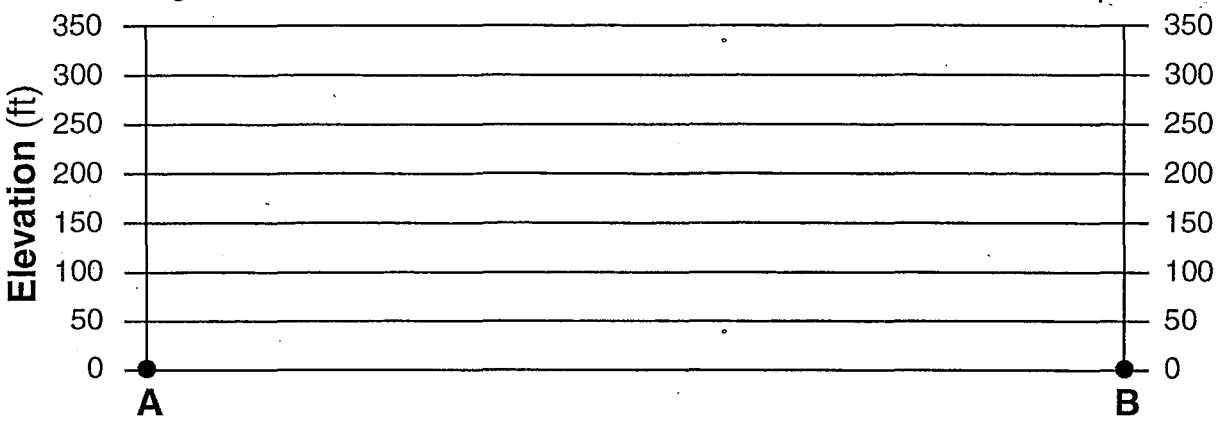


What is the latitude and longitude of point Y?

Name _____ Score _____

Topic 2: Measuring the Earth Free Response

1)



2) _____ ft/mi

3)

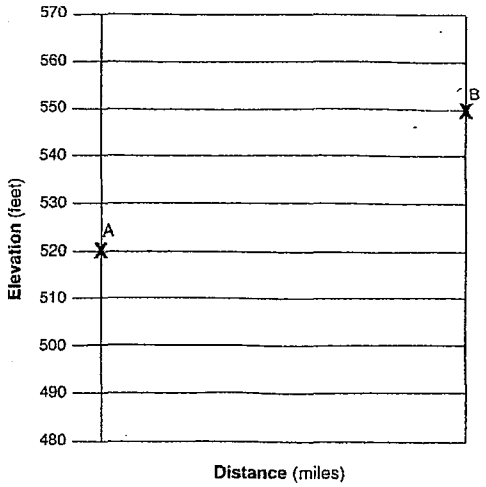
4)

write the equation	substitute with units	solve w/units to the nearest tenth

5) _____

_____

6)



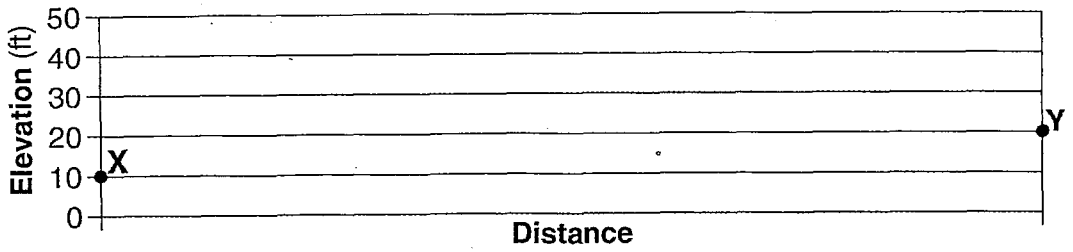
7) _____

_____

8) _____

9) _____

10)

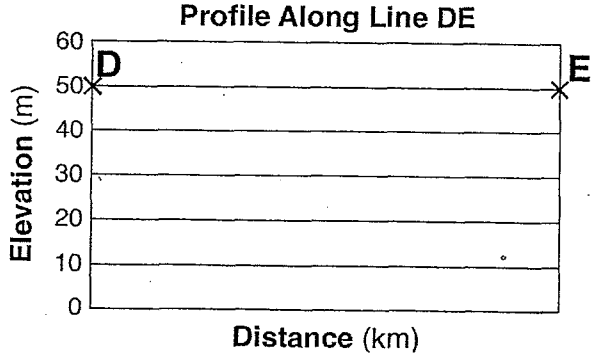


11)

12)

write the equation	substitute with units	solve w/units to the nearest tenth

13)



14) _____

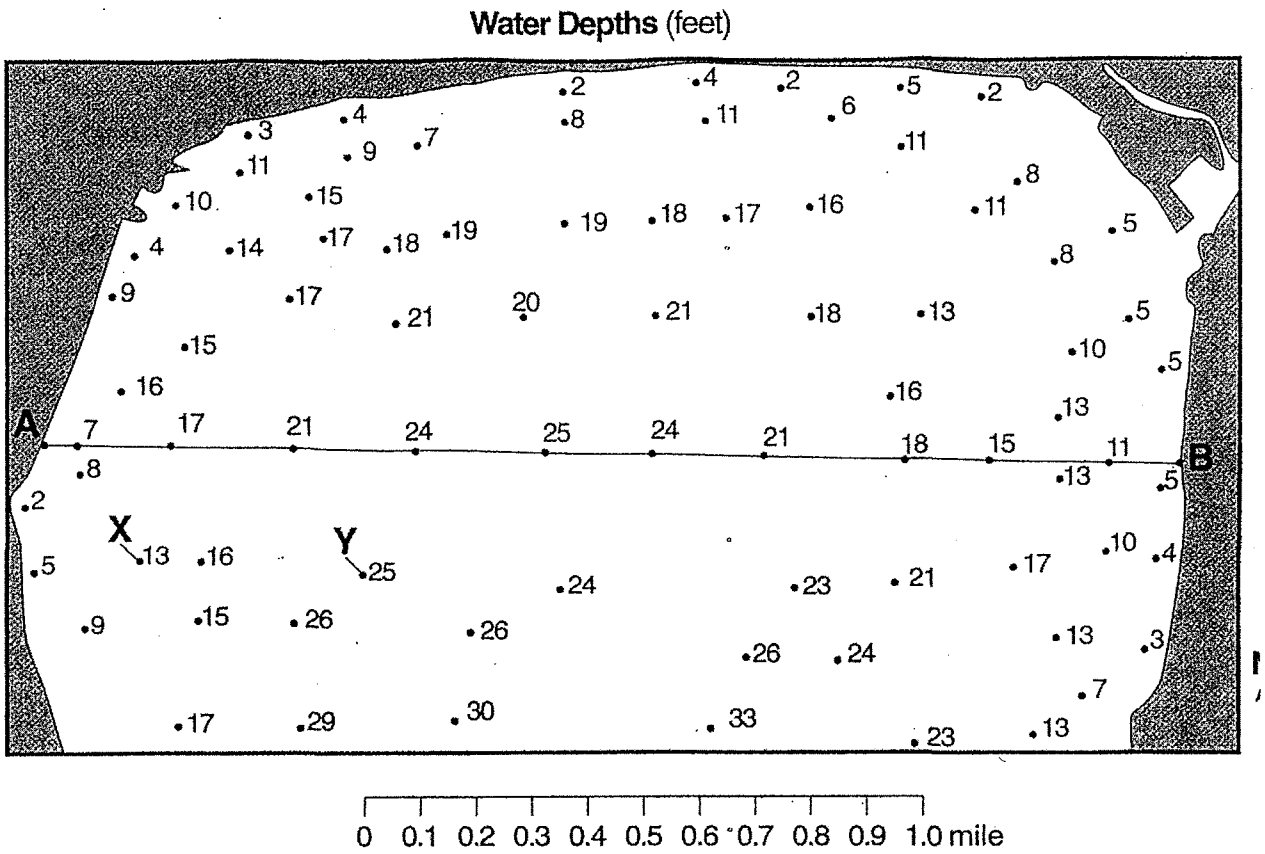
_____

15) _____

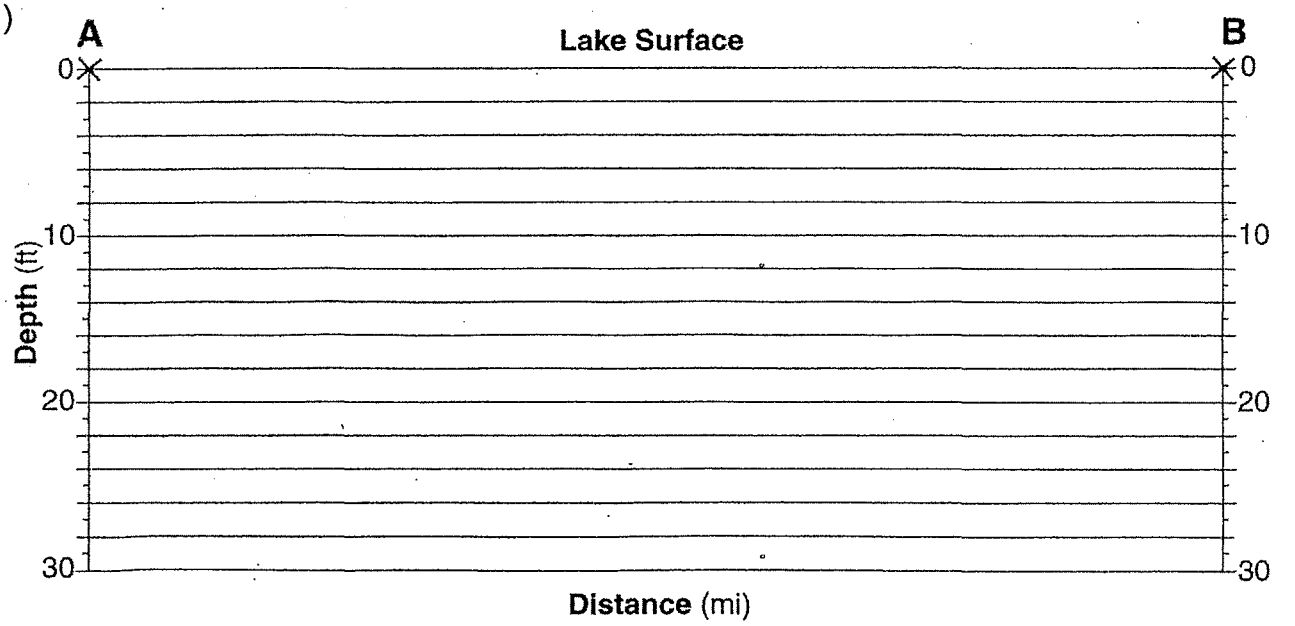
16) _____

_____

17)


Water Depths (feet)
A
B
X
Y
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 mile

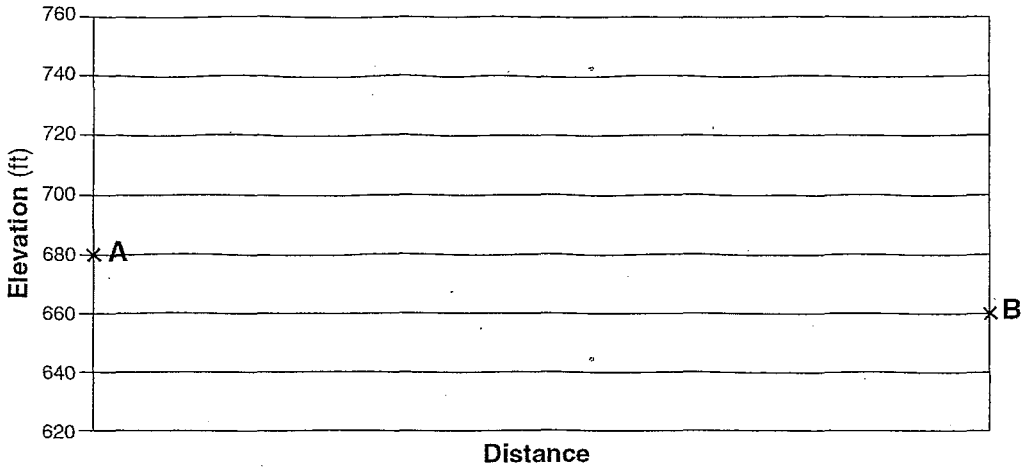
18)


A
B
Lake Surface
Depth (ft)
0
10
20
30
Distance (mi)

19) _____

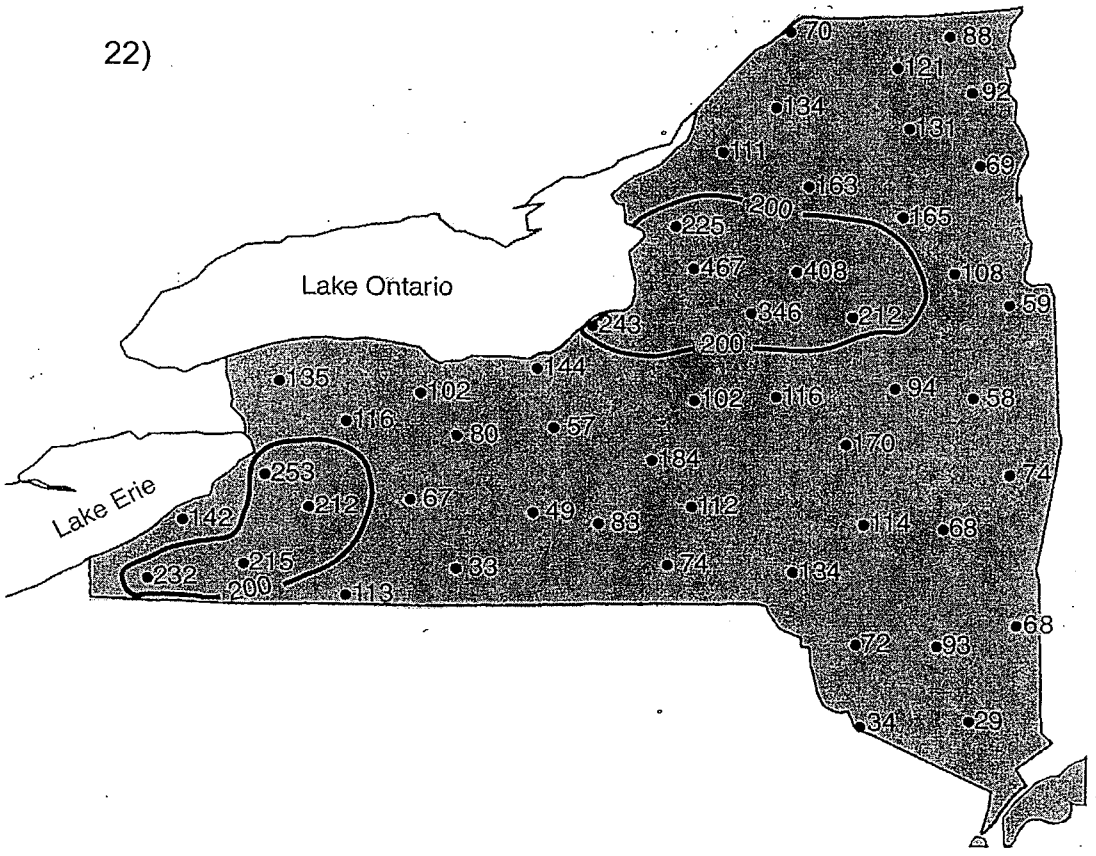
20) _____

21)



760
740
720
700
680
660
640
620
Elevation (ft)
A
B
Distance

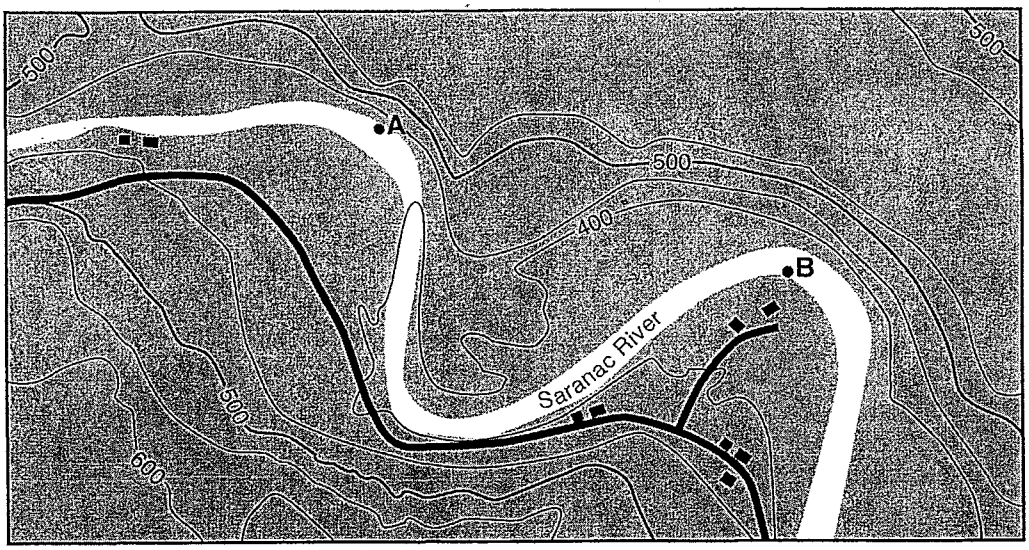
22)



Lake Ontario
Lake Erie
70
88
121
92
134
131
111
69
163
200
165
225
467
408
108
59
346
212
243
200
144
135
102
102
116
94
58
116
80
57
170
184
74
253
212
67
49
83
112
114
68
142
215
232
200
33
74
134
113
68
72
93
34
29

23) _____

24)



25) _____

_____

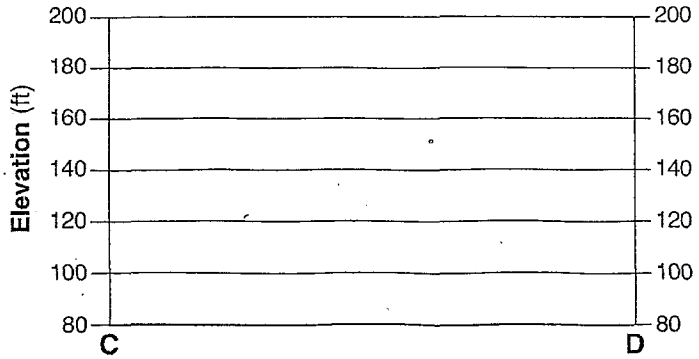
26) _____

_____

27) _____

28) _____

29)



30) Latitude _____ Longitude _____