Name: _____ class _____ Date: _____

1. Reading a contour map follows a few simple rules that apply to all these types of maps. Because most people have a feel for topography, determining the rules of contour maps is easiest using a topographic map. Study the topographic map in Fig. 1 and complete the rules of contour maps. For each rule, the section of the map illustrating the rule has been lettered.

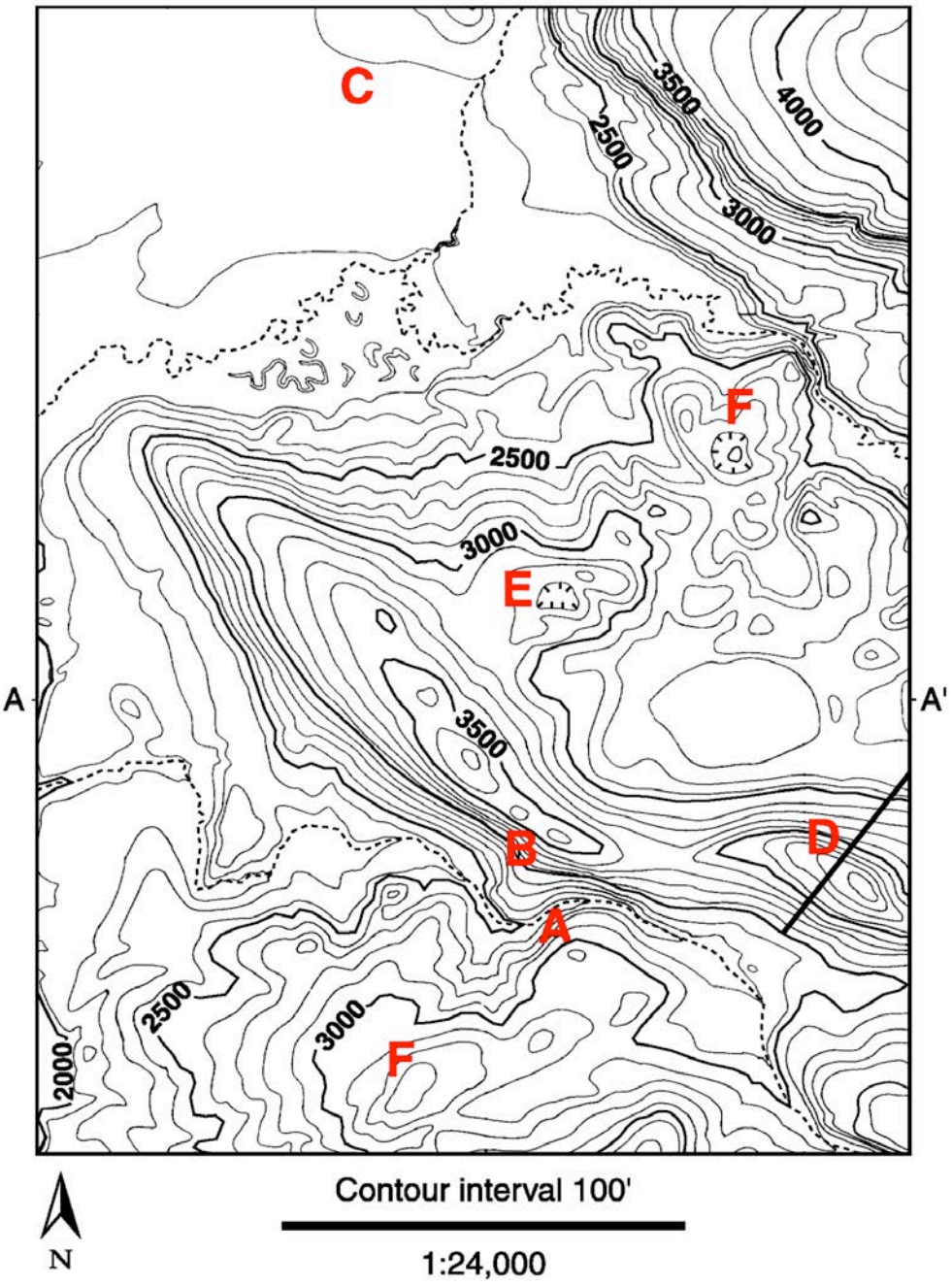


Fig. 1: A topographic contour map.

a. Contours point or make a V shape in the _____ stream direction [A].

b. Closely grouped contours indicate _____ slopes [B].

c. Widely spaced contours indicate _____ slopes [C].

d. If your hike over the top of a hill, you will cross the same/different (circle one) contours on opposite sides of the summit [D].

e. Contours can/cannot (circle one) touch or cross.

f. Depressions are enclosed by _____ on the uphill/downhill (circle one) side of the contour [E].

g. Contours can/cannot (circle one) split.

h. Closed contour lines indicate a _____ or a _____ [F].

i. Points on one side of a contour line are _____ or than points on the other side.

2. Plotted on the map in Fig. 2 are the results of a topographic survey. Each point is a position where the elevation has been determined. The points are labeled with their height in meters. Dashed lines represent streams or rivers. Use these data points to construct a topographic map of the area.

a. Determine the maximum and minimum elevations in the map area. Enter your results below.

Minimum: _____ Maximum: _____

b. Using a contour interval of 10 m, determine the contour lines necessary to accommodate the maximum and minimum elevations. Enter your results below (note that there may not be contour lines to fill all the blanks).

_____ _____ _____ _____

_____ _____ _____ _____

_____ _____ _____ _____

c. Start drawing your contours in the southwest corner of the map. Use the rules of contours to draw your contour lines correctly. Make your map as realistic as possible. After drawing two contour lines completely across your map, have your instructor check your work before you proceed further.

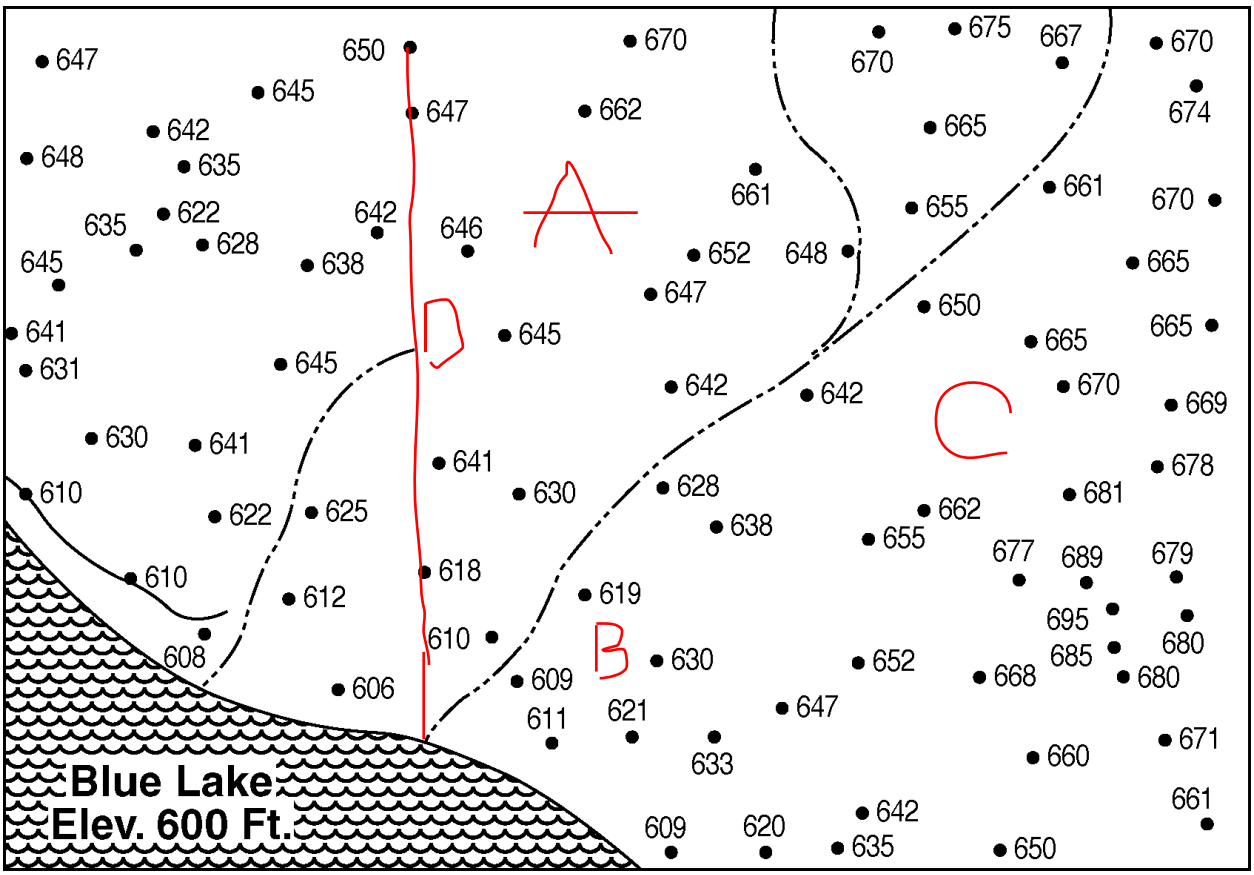


Fig. 2: The results of a topographic survey. 1cm= .25miles

Follow this link to a Java applet that will help you with this contour map.

2. Using the topographic map provided by your instructor for Activity 2, answer the following questions.

   a. The map has a contour interval of _____

   b. The elevation at point *A* is _____

   c. Is the slope at point *B* steep or gentle? _____

   d. The maximum elevation on the map is _____

   e. The minimum elevation on the map is _____

   f. This map has a total relief of _____

   g. The local relief at point *C* is _____

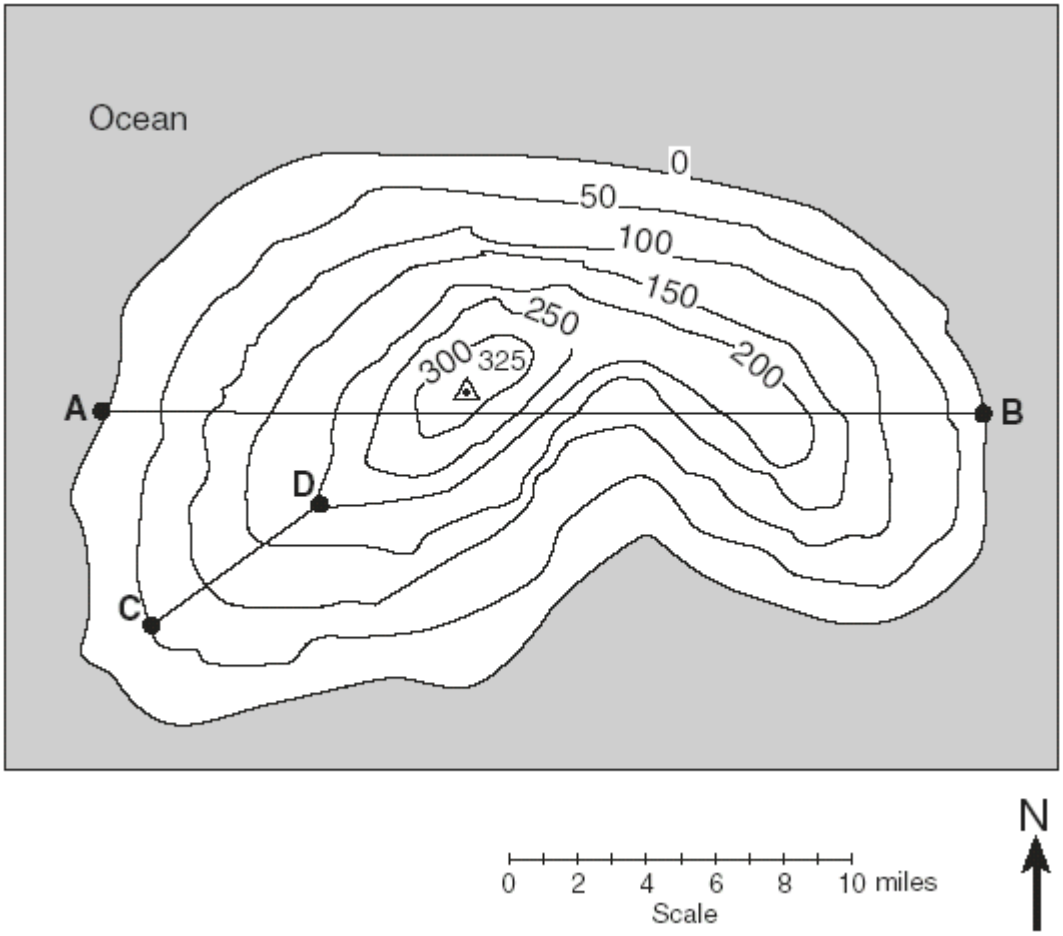
   h. Calculate the gradient along line *D*. _____

   i. Express this gradient as the fall in feet per mile. _____

REGENTS EARTH SCIENCE
Topographic Profiles Practice

Name: _____ Date: _____

Directions: Using the diagram below, answer the questions that follow.



1. What is the contour interval of this map? _____

2. What is the highest elevation? _____ Lowest elevation? _____

3. Measure the *distance*, in CENTIMETERS, from point A to point B. _____

4. Convert this distance into MILES, using the scale provided:

Answer: _____

5. Repeat the procedure for 3 and 4 for point C to point D.

CM Distance: _____ Answer (MILES) : _____

6. Determine the elevation at Point A:_____Point B: _____ Difference: (A-B) _____

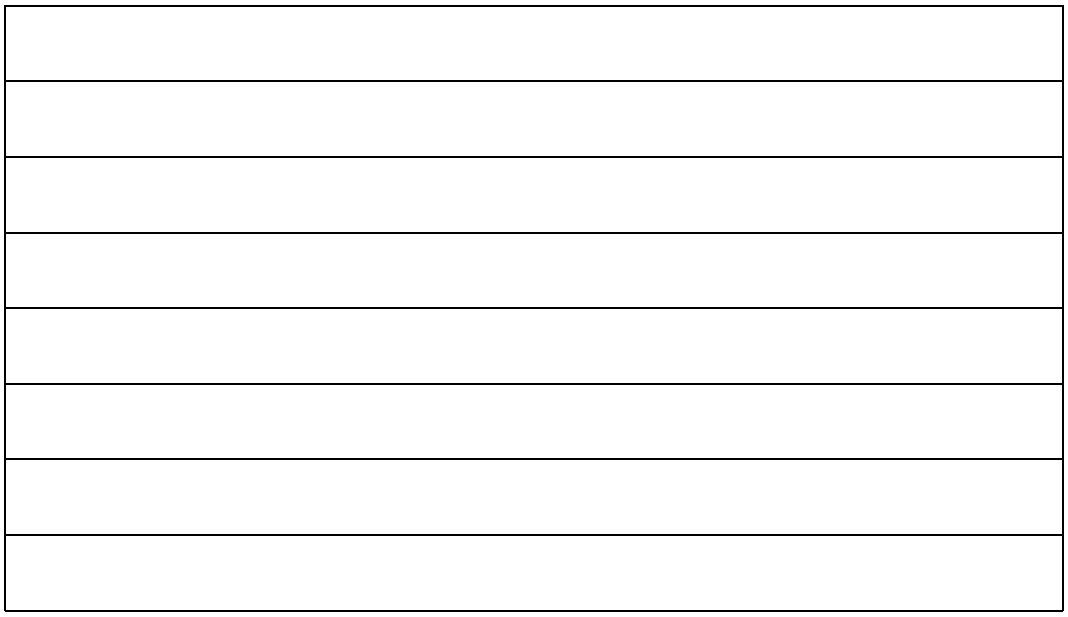
7. Calculate the elevation GRADIENT between points A and B:

REMEMBER: Gradient = $\frac{\text{Difference in Field Values}}{\text{Distance Between Points}}$

8. Repeat the procedure for points C and D:

Elevation at C: _____ D: _____ Difference (C-D): _____ Gradient= _____

9. Draw a profile that describes the elevation across line A-B.



10. Draw a profile that describes the elevation across lineC-D.