Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_ Block \_\_\_\_\_\_\_\_\_

**Making a Topographic Map**

**Lab**

**Topographic maps** are birds-eye views of an area that are used to show the elevation, topography and gradient of Earth’s surface. Topographic maps use **contour lines** that connect points of equal elevation; they never intersect and always close to form an irregular circle. The elevation separating two contour lines is called the **contour interval**. A **gradient** is the difference in elevation divided by the distance between two points (gradient = rise/run). As a gradient becomes steeper the contour lines get closer together. As a gradient becomes more gradual, the contour lines are spaced further apart.

**Procedure**:

1. Use the **marked side of the plastic box** to **fill the plastic box to the 1 cm line** with the colored water.
   1. Put the top on the box and **draw a contour line that matches the water line**.
2. Remove the lid and **fill the plastic box to the 2 cm line**.
   1. Put the top back on and **draw the contour line** that matches the new water level.
3. Continue to **fill the plastic box up to the 7cm line**.
   1. Remember to draw the contour lines after each 1 cm line is filled.
4. Transfer your contour lines from the plastic box top to the space provided in this lab.
   1. Label the **1 cm line as 6,280 ft, 2 cm = 6530 ft, 3 cm = 6780 ft, 4 cm = 7030 ft, 5 cm = 7280 ft, 6 cm = 7530 ft, 7 cm = 7780 ft and 8 cm = 8030 ft**

**Analysis**:

1. What view is a topographic map drawn from? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What is a topographic map used to show? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What are contour lines? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Define: **gradient** - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* 1. What is the formula for gradient? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. As contour lines get **closer together**, what does this indicate? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. As contour lines get **further apart**, what does this indicate? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

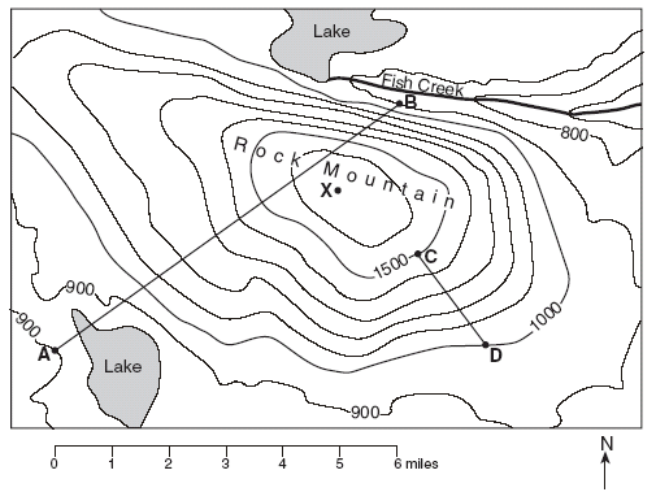
**Topographic Map**



**Analysis**:

1. On your map locate:
   1. **The most gradual gradient** and place the letter **A at the highest elevation** and letter **B at the lowest elevation,** **connect the two points with a straight line**.
      1. Determine the gradient of this line: (**gradient = rise/run**)
         * Work:
         * Answer:
   2. **The steepest gradient** and place the letter **C at the highest elevation** and the letter **D at the lowest elevation**, **connect the two points with a straight line**.
      1. Determine the gradient of this line: (**gradient = rise/run**)
         * Work:
         * Answer:

**Making Connections** – Use the diagrams below to answer the questions that follow.



1. What is the elevation at:

A: \_\_\_\_\_\_\_\_\_\_ B: \_\_\_\_\_\_\_\_\_\_ C: \_\_\_\_\_\_\_\_\_\_ D: \_\_\_\_\_\_\_\_\_\_

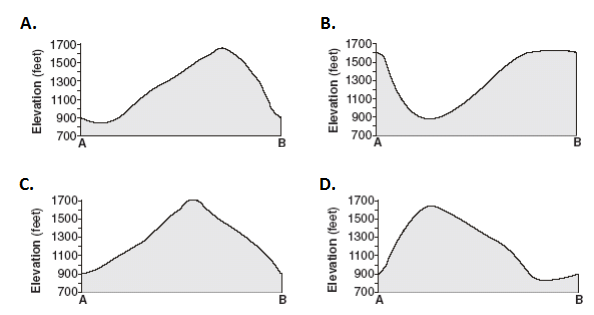
1. What is the contour interval of this map? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What is the **gradient** between points **C and D**?

Formula:

Work:

Answer:

\_\_\_\_\_ 4. Which profile would best represent the image above between points A and B?



**Topographic Profile** – complete a topographic profile for the map below.

