NAME: _Notes_ Date:_____

A. Patterns of Contour Lines:

1. Concentric Circles:

Indicate hill/mountain (elevation ↑)
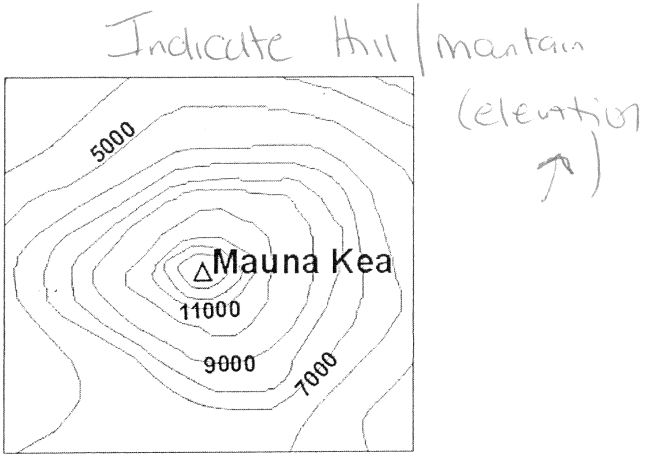
2. Lines that make a "V" or "U" shape:

a valley
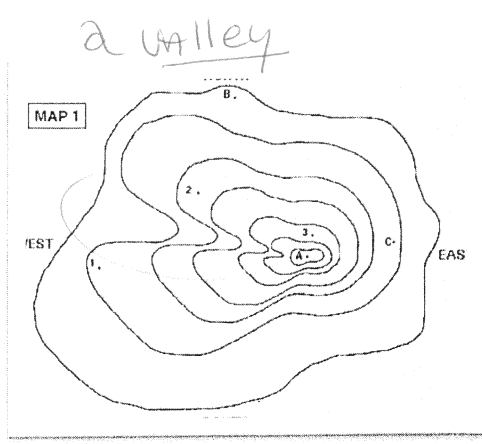
B. Gradient is indicated by how close (or far) the contour lines are spaced from one another.

1. A steep (high) gradient:
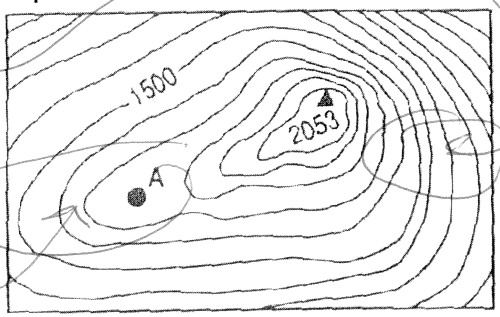
lines spaced close together

2. A gentle (low) gradient:

lines spaced further apart

3. Formula for Gradient:

$$Gradient = \frac{Change\ in\ elevation}{distance}$$

C. Contour lines bend when they cross any flowing body of water (stream, creek, and river). This shape is a "V" or "U."

1. The tip of the "v" point's _upslope_, and the water flows downslope in the _opposite_ direction.

2. Always look at the contour elevations. Water will always flow from _high_ to _low_ elevation.

Contour interval ~ 20 meters
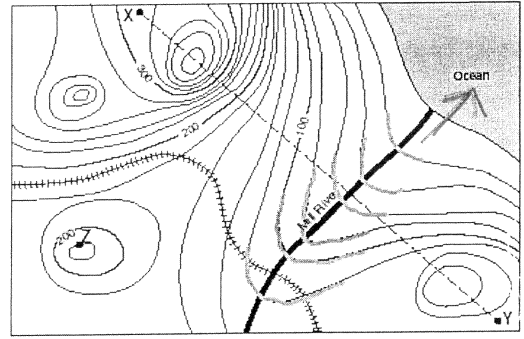
D. Contour Interval: Is the difference in elevation between consecutive contour lines. It is usually found at the top or bottom of a map. If it is not, you must determine the numerical value between the **INDEX CONTOURS (always in bold on contour maps)** and divide by the number of contour lines between them.

Example:

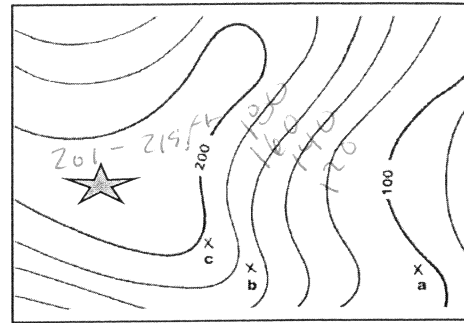$$\frac{200ft - 100ft}{5\ contour\ lines} = \frac{100}{5}$$
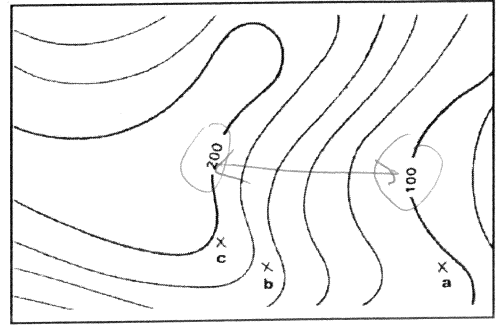
= 20 ft contour interval

E. **Estimating Elevation not marked on a map:**
Always estimate the average of the two contour lines it is in-between:

A= 110 ft   B= 170 ft   C= 190 ft

F. **Maximum and Minimum Elevations**: Must be the maximum minimum value that lie within that contour interval
   a. Maximum value for the star: 219 ft
   b. Minimum value for the star: 201 ft   and

G. **Depressions/Hatchured Contour Lines**: Show where elevation is decreasing. Will form concentric circles that indicate land is getting lower/deeper towards the center

N ↑   contour interval = 10'

Rule: The first depression/hatchured Contour line is equal in elevation to the Contour line prior
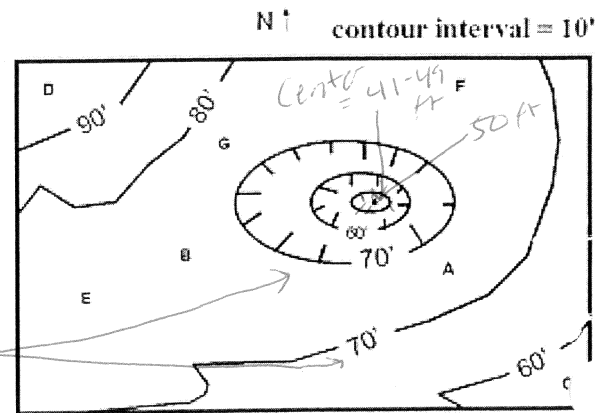
H. **Benchmarks: These are known elevations on a map.**
The symbols for Benchmark are : X or BM

General:

△ This symbol on a map indicates:

Sea Level on a map is always going to be : _____0_____ m or ___0___ ft

If elevation is reported in feet, the distance on a map scale will be reported in ___miles (mi)___

If elevation is reported in meters, the distance on a map scale will be reported in ___kilometers (km)___

When calculating gradient on a map, you must include UNITS (ft/mile OR m/km). Remember to use a piece of paper to mark the distance on a piece of paper, and drag down to the map scale. To find the difference in elevation, you must use the contour lines!

I. **To construct a topographic profile:**
   1.) Line a scrap piece of paper directly between two points of interest
   2.) On the paper, put a mark at every location where a contour line meets that piece of paper WITH the numerical elevation→
   3.) Drag the piece of paper down below a profile vertical scale.
   4.) Plot the elevations directly above your marked points. Connect the points with a smooth curve to show the trend in increasing and/or decreasing elevations.