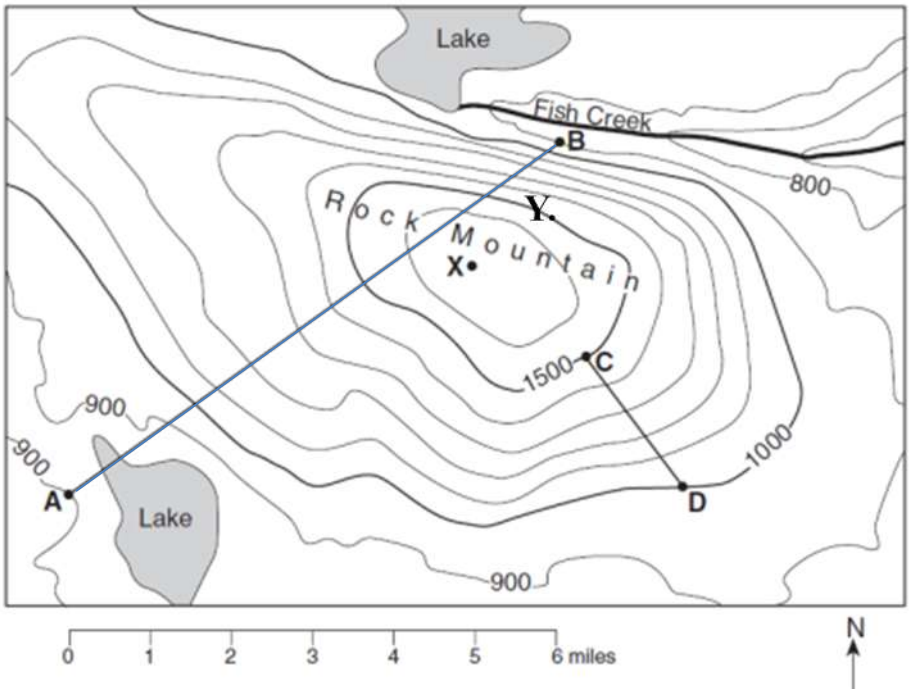
Lab part B – Profile Construction

NAME:_____ Block:_____ Partner: _____

Introduction:

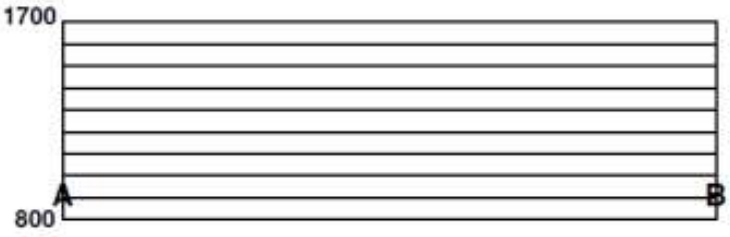
A very useful exercise for understanding what topographic maps represent is the construction of a topographic profile. A topographic profile is a cross-sectional view along a line drawn through a portion of a topographic map. In other words, if you could slice through a portion of the earth, pull away one half, and look at it from the side, the surface would be a topographic profile. Not only does constructing a topographic profile aid in understanding topographic maps, it is very useful for geologists when analyzing numerous problems.

Map 1 – Rock Mountain



1. What is the **contour interval** for this map? _____**feet**

2. Use Map 1 – Rock Mountain map to construct a profile between **line AB**. The first and last point is done for you at 900 ft. If point B does not match up with B marked on your paper, simply write B at the correct location.

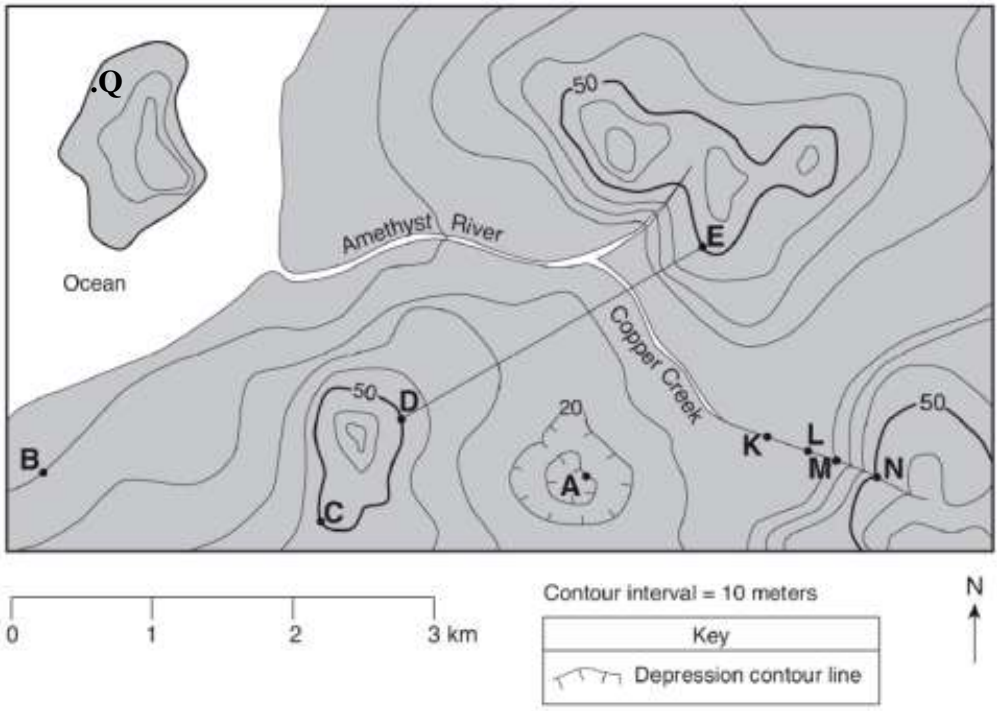


3. Determine which side (compass direction) of Rock Mountain has the **steepest slope** and **explain** how you can tell this by looking at the contour lines.

5. Which side of Rock Mountain would be the **easiest to** hike up? **Explain your inference**.

6. Calculate the gradient between points C and D (show ALL work and include units!)

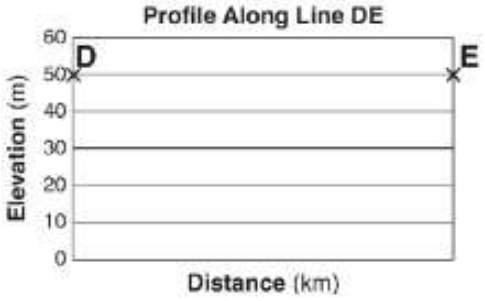
Map 2 – Amethyst River



7. What is the contour interval for this map? _____

8. Construct a **profile** between **points DE**.

9. By using your ESRT, calculate the **gradient,** *to the tenths place,* between **points B and C**. *Be sure to write original formula, show substitutions with units, and box in answer with units.*



10. Towards which compass direction is **Copper Creek** flowing between points N and K? _____

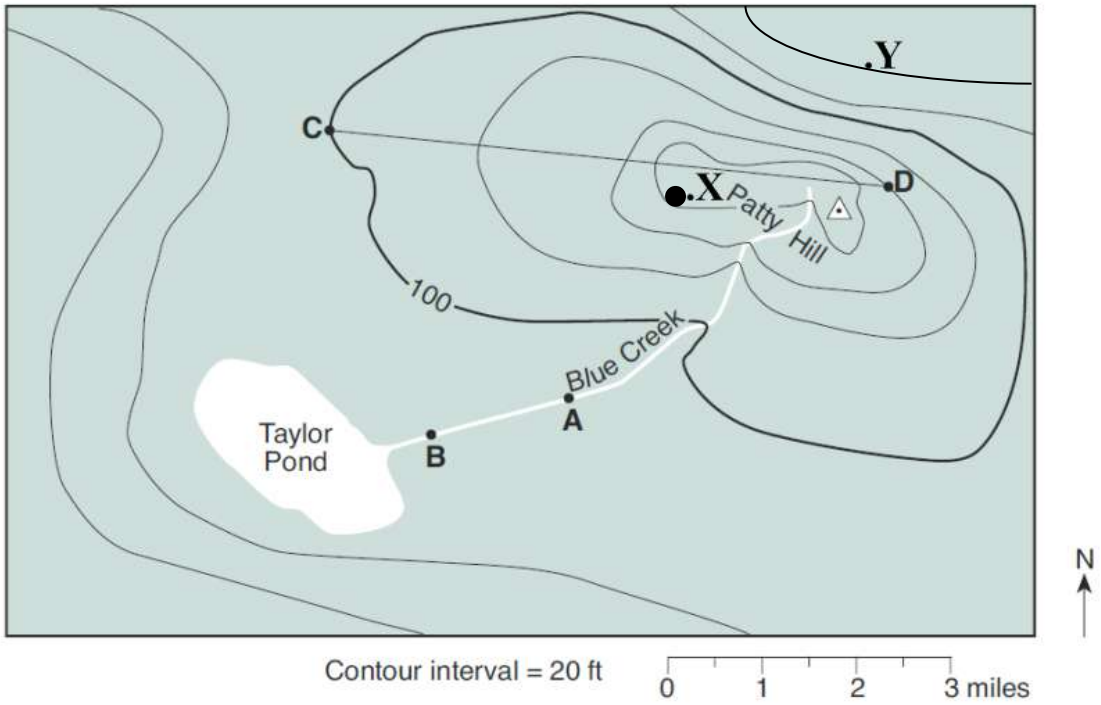
11. What are **elevations** at the following points? (note that some points have acceptable ranges in values).

A. _____ M. _____ Q. _____ K. _____

12. What is the highest possible elevation that Amethyst River could start? _____

13. Is Copper Creek flowing **faster** between **points M and N** or **points K and L**? **Explain how you can tell**.

Map 3 – Patty Hill



14. What is the contour interval for this map, *include units*? _____

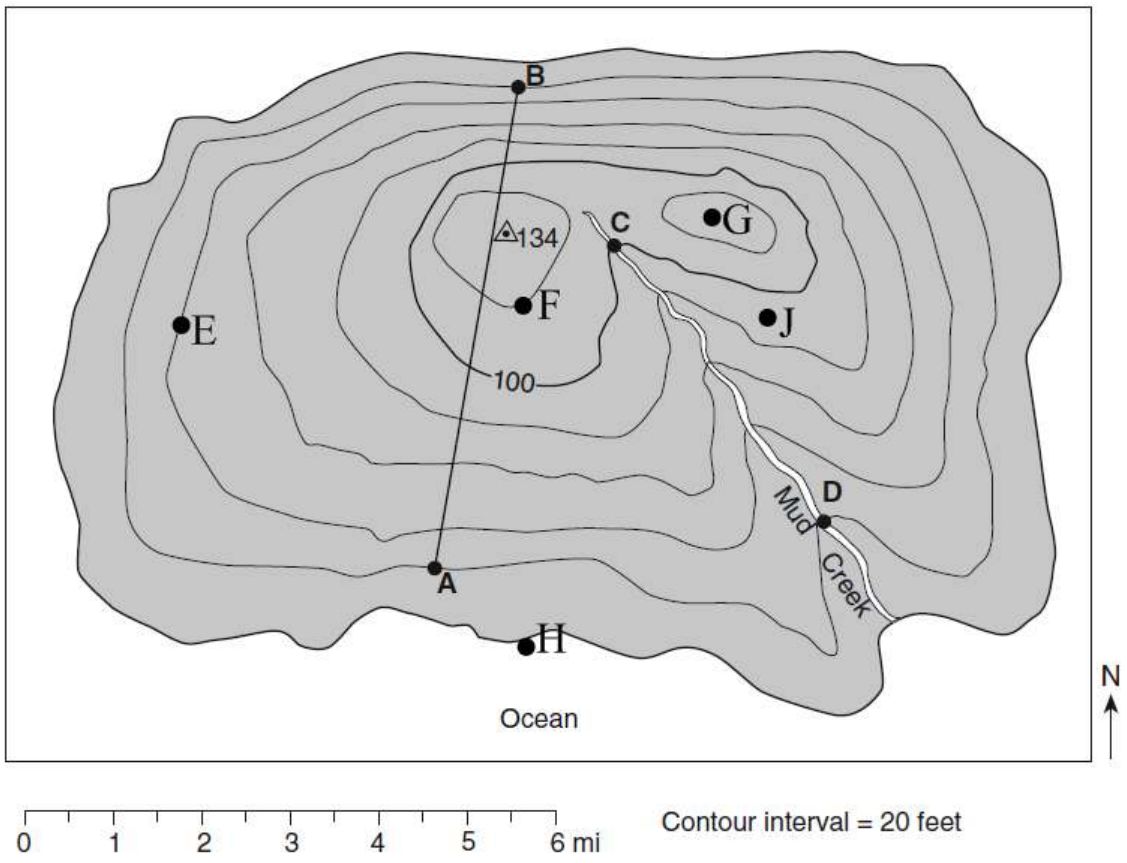
15. By using Map 3 – Patty Hill map to construct a **profile** between **points C and D**. .

16. By using your ESRT, calculate the **gradient,** *to the tenths place,* between points **C and X**. *Be sure to write original formula, show substitutions with units, and box in answer with units.*

17. By using your ESRT, calculate the **gradient,** *to the tenths place,* between points **X and Y**. *Be sure to write original formula, show substitutions with units, and box in answer with units.*

18. Compare the gradients between points **C and X** to points **X and Y**.

Map 4 – Mud Creek



19. By using Map 4 – Mud Creek map to construct a **profile** between **points A and B**. Line up point A to point A and if point B does not hit B it is ok.

20. Without creating a scaled profile, draw an image in the box below that would show how the topography of the land would change from points H to J (estimate a profile). What geographic feature did you cross along the way?

H

J