Topographic Maps and Profiles

CLASS NOTES

• Topographic Maps [contour maps] - ______________________________________________________
  • Topographic maps show three-dimensional shapes in two dimensions
• Elevation - ________________________________________________________
• Benchmark - a marker that has the exact latitude, longitude, and elevation of that position
  • Labelled on a map as BM.X.
• Natural Features - ________________________________________________________
  • Examples: mountains, hills, lakes, and rivers
• Cultural Features - ________________________________________________________
  • Examples: roads, cities, buildings, and dams
• Contour Lines - ________________________________________________________
• Contour Interval - ________________________________________________________
  • The contour interval is usually found on the map key and legend
• Index Contour - ________________________________________________________
• Gentle Slope - when contour lines are spaced ____________ apart
• Steep Slope - when contour lines are spaced ____________ together
• When contour lines cross a river they bend ______________________
  • Note: rivers flow the opposite direction the contour lines point
• Depression Contours - ________________________________________________________
  • This allows you to distinguish a hill from a hole
Calculating the Highest Point:

1. 
2. 
3. 
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- Topographic Profile - 

- Creating a Topographic Profile:
  1. You need ______ points on a contour map and a horizontal grid between the two points
  2. Transfer the points from the map to the horizontal grid
  3. Connect the points with a ______________________ line to draw a profile

Topographic Profile Example
PART I QUESTIONS: MULTIPLE CHOICE

Base your answer to questions 1 through 3 on the contour map below. Elevations are shown in meters.

1. What direction does the Mill River generally flow towards?
   a. southwest  
   b. southeast  
   c. northeast  
   d. northwest

2. What is the elevation of point Z?
   a. 240 meters  
   b. 220 meters  
   c. 190 meters  
   d. 250 meters

3. What is the highest contour line represented on the map?
   a. 220 meters  
   b. 340 meters  
   c. 380 meters  
   d. 400 meters
Base your answer to questions 4 through 6 on the contour map below. Letters A through G represent locations on Earth's surface. Elevations are measured in feet.

4. What direction does the Coe Creek generally flow towards?
   a. southwest
   b. southeast
   c. northeast
   d. northwest

5. What is the elevation of point A?
   a. 340 meters
   b. 320 meters
   c. 300 meters
   d. 280 meters

6. What is the gradient between points X and Y?
   a. 20 ft/mile
   b. 30 ft/mile
   c. 40 ft/mile
   d. 50 ft/miles
7. What direction does the Red Creek generally flow towards?
   a. southwest  
   b. southeast  
   c. northeast  
   d. northwest

8. What is the approximate gradient from point A to point B on the map?
   a. 25 ft/mi  
   b. 50 ft/mi  
   c. 75 ft/mi  
   d. 100 ft/mi

9. Which hill has the steepest slope?
   a. Amethyst Hill  
   b. Nasus Hill  
   c. Coco Hill  
   d. Law Hill
Base your answers to questions 10 through 12 on the topographic map below and on your knowledge of Earth science. Points A, B, C, and D represent locations on the surface of Earth. Elevations are in feet.

10. In which general direction does Snapper Creek flow?
   a. north
   b. east
   c. south
   d. west

11. What is the approximate gradient from point X to point Y on the map?
   a. 238 ft/mi
   b. 263 ft/mi
   c. 294 ft/mi
   d. 333 ft/mi

12. What is the maximum elevation at point B?
   a. 3,599 feet
   b. 3,699 feet
   c. 3,799 feet
   d. none of the above
PART II QUESTIONS: FREE RESPONSE

Base your answer to the question below on the topographic map and on your knowledge of Earth science. Line AB is a reference line on the map. Elevations are shown in feet.

13. On the grid below, construct a topographic profile along line AB by plotting the elevation of each contour line that crosses line AB. Points A and B have already been plotted. Connect all plots with a line, starting at A and ending at B, to complete the profile.
14. On the grid below, construct a topographic profile along line BC by plotting the elevation of each contour line that crosses line BC. Points B and C have already been plotted. Connect all plots with a line, starting at B and ending at C, to complete the profile.
Base your answer to the question below on the topographic map and on your knowledge of Earth science. Line AB is a reference line on the map. Elevations are shown in feet.

15. On the grid below, construct a topographic profile along line AB by plotting the elevation of each contour line that crosses line AB. Points A and B have already been plotted. Connect all plots with a line, starting at A and ending at B, to complete the profile.