

Map Interpretation Exercise #1

Name: _____

Date: _____

It is mid August. You and a friend have been hiking around testing out your new compass. You hitchhiked to a state park about 3-4 miles south-southwest of the City of Boulder.

1. What is the name of this state park? _____
2. How many square kilometers does this state park occupy (measure only the section you are in and measure it as a rectangle)? _____

From there you hiked for about two miles southwest through Walker Ranch. While exploring the entrance to a mine tunnel the compass falls out of your pocket into the abyss below. Luckily for you, you held onto the map.

3. After exploring the mine you find yourself standing near railroad tracks. There is a sign in front of you that reads "Jefferson County Line". You see a small mountain South West of your current location. What is the name of this mountain? _____
 - a. What does the symbol on top of this mountain represent? _____
4. What is the change in elevation from your location at the railroad tracks to the summit top?

 - a. What is the distance in miles? _____
 - b. Using the trip planning tools, how long will it take you to hike to the top of this mountain?

 - c. What is your pace measurement (from class #1)? _____
 - d. How many of your paces will it take to travel to the summit? _____
5. You hike to the top of this mountain to get a better look around at your surroundings. At the very top your friend begins to panic and cry... "Were lost, we're gonna die!" You realize your friend is worthless, which direction would be the best to throw your friend off of (i.e.: the steepest)? _____
6. Looking around from the mountaintop, what features may be visible to you? Assume no tree interference. Circle one or more:
 - a. Gross Reservoir Spillway (Northwest of summit)
 - b. S. Boulder Peak (Northeast of summit)
 - c. Chapel in the Hills (South of summit)
 - d. Rainbow Cut (South east of summit and just north of the town of Plainview).

7. Thirsty you begin to hike downhill southeast to a water source. Along the way you dust off your friend and bring him along. What type of water source is this? _____
- a. Using cardinal directions (N, E, W, S, NE, SW, etc) which direction does this water flow? _____ (up or down is not an acceptable answer)
8. Now confident of your location, you plan your hike to a friend's house in the small town of Plainview. You don't like this friend's house because it is closest to the tracks but you are in need of a ride home so you go anyway.
- a. What elevation does your friend's house sit at? _____
- b. From the intersection of the train tracks and South Draw, what feature will you follow for your shortest and safest route? _____
9. From the intersection of the train tracks and South Draw how many potential water sources (within a 1/10 of a mile of your planned route) will be available to you along your planned route? _____
- a. List the names (if applicable) and types of each water source:
- | | |
|-------------|-------------|
| Name: _____ | Type: _____ |
| Name: _____ | Type: _____ |
| Name: _____ | Type: _____ |
| Name: _____ | Type: _____ |
| Name: _____ | Type: _____ |
- b. How many of these water sources could you expect to be reliable at this time of year (August)? _____
10. Approximately how many miles must you walk along your route? (From the intersection of the train tracks and South Draw to your friends house in Plainview) _____
- a. How long will it take you to hike this journey? _____
11. Traveling along your route, at what elevation will you be at when you are in the flatter of the two saddles? _____
12. From Plainview you drive along a light duty road to state route 72. Describe what the vegetation may be like, or not like, on the majority of this drive? _____
- a. Once on route 72 you drive southeast. What map will you need to immediately continue your travels? _____

13. What is this maps' printed declination and year of publication:

Printed declination: _____ Publication date: _____

- a. Go on-line (use geomagnetic data link from online course content) and find the current declination for this area in Colorado: _____
- b. What is the current rate of change for this area: _____
- c. What is the difference between the maps printed declination and the current declination? _____
- d. What error will this difference produce over the following distances:
 - i. 1 mile: _____(in feet)
 - ii. 3 miles: _____ (in feet)

14. Use the online course content to complete this question.

- a. Go on-line to the USGS website and find the map that has the summit of Mount Rainier, WA. Make sure you find the map with the actual summit. You will need to click on "USGS Store" and then use one of the search tools (basic or Map Locator). What is the name of this map in the 7.5 quad series?

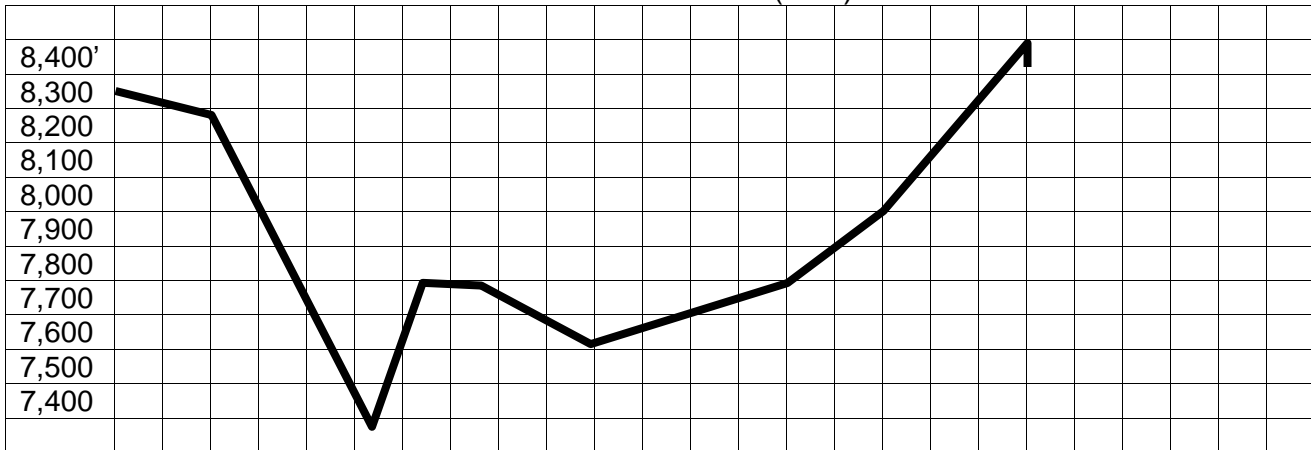
- b. For extra credit download this map and print out an 8.5"x11" copy of this 7.5 quad. This copy can be black and white. You must be able to download and view PDF files.

15. Draw **rough elevation profiles** (aka: Trail Profiles) for the following journeys; you will be traveling in a straight line, aka: "as the crow flies". This will help you in understanding contour lines and what they represent in steepness and distance.

Directions: Determine elevation extremes of starting and ending points. Using recommended elevation change (number in parenthesis) label vertical axis appropriately. Fold this paper back, lining up the top of the graph as an edge between the two points (ensure you are going in the correct direction). Now mark significant elevations at points along the graph. Then connect the points.

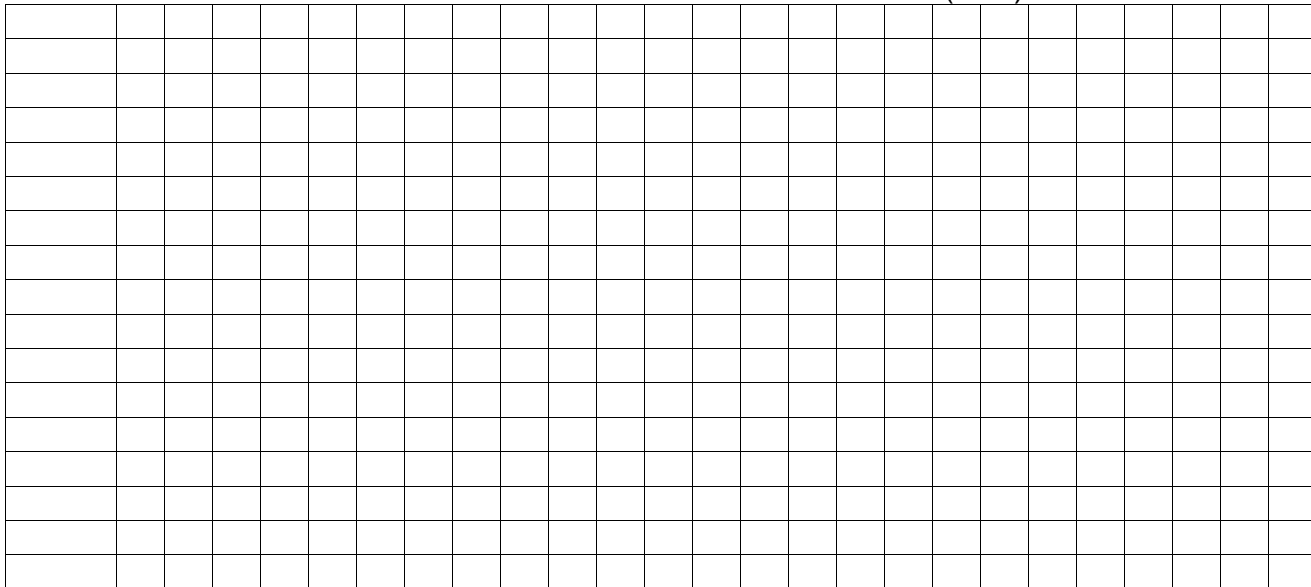
Then using the map's horizontal scale measure the distance on a strictly horizontal plane (as the crow flies) and the actual distance. For the latter measure each line of the Trail Profile you have just drawn, note this actual distance will not be entirely accurate due to our makeshift graph.

a. From Eldorado Mt. to Coal Creek Peak (100') -



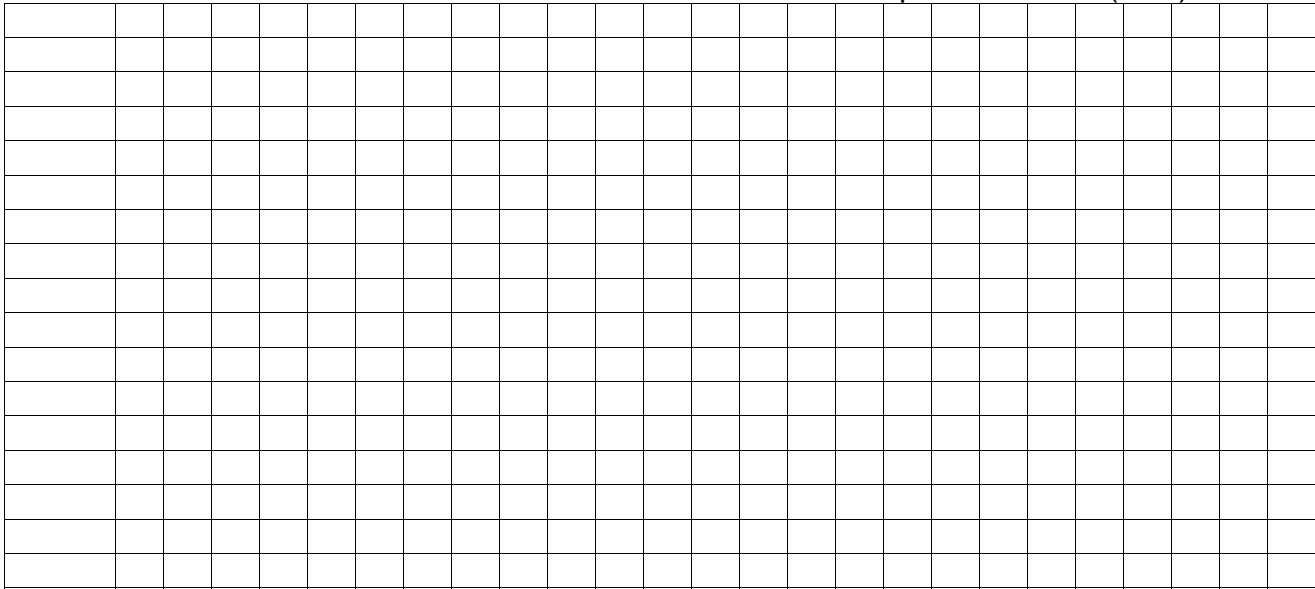
Horizontal Distance: 1.8 Actual Distance: 2.55

b. From the water tank at Shanahan Hill to Bear Peak (200') -



Horizontal Distance: _____ Actual Distance: _____

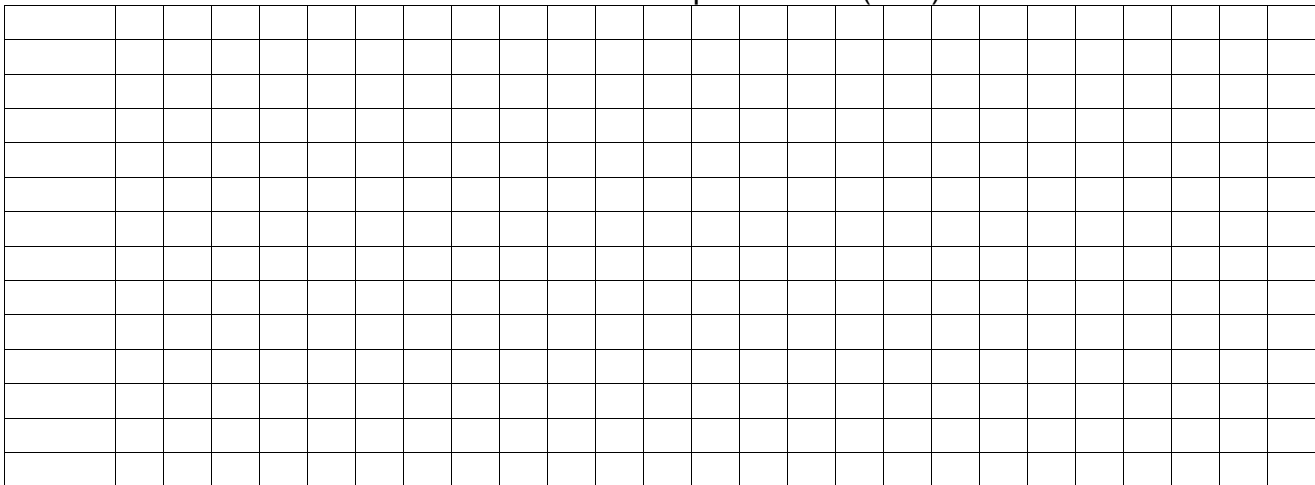
c. From the train tracks and South Draw to the Chapel in the Hills (100') -



Horizontal Distance: _____ Actual Distance: _____

EXTRA CREDIT

d. From Coal Creek Peak to Scar Top Mountain (100') -



Horizontal Distance: _____ Actual Distance: _____