

Navigation Homework Set

Name: _____

To be completed **PRIOR** to the Navigation Lecture. **Hand in before the beginning of lecture.**

Required reading:

[MF7] *Mountaineering: The Freedom of the Hills*, 7th edition, Ch. 5, Navigation (29 pp) or
 [WN] *Wilderness Navigation*, 2nd Edition, by Burns and Burns, Chapters 1 – 6, and 10.

Part 1 of these problems relies on reading the book. (*That's a hint!*)

For Part 2, use the book and use the attached map of "Parker Peak."

The goal of the homework is to get a head start on Navigation concepts before the lecture-workshop. Please try to do every question; mark ones that leave you lost with a "?".

Bring a compass, ruler, pencil, and eraser to the Navigation Lecture / Workshop.

Part 1 Mark the box () in front of your best answer.

1. The least likely features to change between old maps and new are:

- roads trails forest cover contour lines buildings

2. Match the U.S.G.S. map color to the most likely meaning.

- | | |
|--------------------------------|---|
| <input type="checkbox"/> Black | a) thick trees |
| <input type="checkbox"/> Blue | b) contour lines |
| <input type="checkbox"/> Brown | c) water features |
| <input type="checkbox"/> Green | d) man-made features (roads, trails, buildings) |

3. Match the feature to the description of the contour lines. (See example drawings - p. 86 [MF7], or p. 19 [WN])

- | <u>Feature</u> | <u>How the contour lines look</u> |
|--|--|
| <input type="checkbox"/> Cliffs | a) Widely spaced lines |
| <input type="checkbox"/> Bowls | b) Semi-circles |
| <input type="checkbox"/> Gentle Slopes | c) Concentric pattern; nested loops of lines |
| <input type="checkbox"/> Peak | d) Nearly touching, or even touching lines |

4. During what part of the trip is party separation more likely to occur?

- in camp on the ascent on the summit on the descent

5. If you become lost, what should you do **first**?

- stop hurry up scout around build a signal fire

6. Navigating is usually just (1) keeping an eye on what's around you, and (2) following:

- a bearing the leader your nose along on your map

Part 2 - Parker Peak Topo Map

Some of these exercises ask you to measure bearings or plot bearings. Read the material in the book, particularly [MF7] pp. 91 – 95 and 103 – 105, or [WN] pp. 27 – 33 and 46 – 50. Give these an honest try, but recall that this is an introduction. The Workshop does NOT expect you to have mastered this beforehand. The Workshop instructors will assist you in learning these skills if you are having difficulties.

Note: All compass readings are given as “True.” Ignore any magnetic information.

7. Refer to Item i. on the map on p. 89 [MF7] or p. 21 [WN]. What feature is similar on the Parker Peak map?

Rock Creek fork (“Y”) Parker Peak Dry Gulch None of these

8. Elevation can be found from the numbers next to the contour lines. The “contour interval” is the elevation difference between two lines.

On the Parker Peak map the contour interval is 50’.

For example, look at the fork in Rock Creek (the “Y” in it).

The creek flows downhill (!), so the fork is below the 100’ line, but above 50’.

Which one of these lies between 150’ and 200’ ?

Rock Creek fork (“Y”) Parker Peak Dry Gulch None of these

9. What is the elevation at the top of Parker Peak, approximately?

400’ 450’ 500’ 600’

10. Distance can be measured with a ruler, then use the scale at the bottom of the map to convert to miles. The entire length of the “scale” on this map is 1.0 mile.

For example, mark the length from the fork in Rock Creek to Marianne Falls. When you place this length next to the scale, you get 0.6 miles.

What is the distance from Marianne Falls to the letter “D” in Dry Gulch?

0.75 mi 0.85 mi 0.95 mi 1.05 mi

11. You are standing in the middle of Dry Gulch. Your destination is the fork in Rock Creek. What is your bearing to the fork?

044°T 050°T 058°T 066°T

12. You are standing on the bank of Rock Creek. The bearing to Dry Gulch is 268°T.

Plot your location on the map.

13. You need to find your location. You have a bearing to Parker Peak of 320°T and a bearing of 246°T to the peak just south of Dry Gulch. (Hint: You are less than one tenth of a mile E of Rock Cr.)

Plot your location on the map.

