

Unless otherwise noted the following assumptions should be made:
Each challenge heading is a separate scenario. Maps are of the 1:24,000 scale.
Compass bearings are based on true north using the map's printed declination.
GPS coordinates use the WGS84 datum and are in UTM units.
See the Nav Tools link for resources and tools.

Compass Skills:

Using the **Mt Weir Map**, Find the trail that runs mainly East-West starting on the eastern edge of the map. This trail starts on the map at a UTM northing of approximately 4425080.

You started your group ski along this trail at a trailhead which is just off the map by about a half mile. You have now been hiking for about an hour and believe you are finally on the map portion you have with you (Mt Weir Map). While standing on this pack trail you measure a field bearing of 204° off of Chittenden Mt to your current location.

- a. **Plot this bearing** on your Mt Weir map and **mark your location** along the trail with a dot and an "A"

Map Interpretation:

Confident of your location from the question above you continue skiing to your destination of Jasper Lake camp (red tent symbol). You continue hiking along and really get in the zone and stop paying attention to where you are going. Before you know it you are above tree line and coming upon a ridge. You feel you are not going in the correct direction so you try to take a bearing off of Chittenden Mt only to find it obscured by clouds. Unable to take any landmark bearing you glean the following information:

- You are standing on what you believe is a well established trail.
 - Trail direction is roughly 82°
 - You feel that you skied about a mile or two from your last known location ("A")
 - Not only are you standing in an area with no trees but feel you are at an elevation that is above tree line.
 - You recently passed (approx $\frac{1}{4}$ mile ago) what appeared to be a small stream that was located below the trail
 - The slope of the mountainside you are standing on has a fall line of about 162°
- a. Where are you? **Mark this location** on the map with a dot and a "B"
 - b. What is the slope angle for the location you are standing at? Is this a potential avalanche slope?

GPS:

What are the GPS coordinates for the campsite (specific location is the peak of the symbol's inner triangle)? GPS coordinates should be in the datum of WGS84 and with UTM coordinates.

(Go to our Resources section for a printable Latitude and Longitude Ruler and directions on how to use one)

Email us for a free PDF of answers. You can also order a complete explanation of how to arrive at these answers through the order page on our website.