## Fall 2010

Coordinates Lab
Name: $\qquad$
To receive full marks, be sure to follow these directions:

- Answer the following questions in a neat and organized fashion.
- Show all calculations and be sure to include units. Simply providing a final answer will not yield full marks. Also, lat./long. require "direction" (i.e. $49^{\circ}$ is insufficient, $49^{\circ} \mathrm{N}$ is a complete answer). Similarly UTM coordinates require E and N designations (i.e. $5,600,200 \mathrm{~m} \mathrm{~N}$ )
- For decimal degrees, dd. ddd denotes 3 decimal places required
- Take care - map measures should be made to the nearest $0.5 \mathrm{~mm}(0.05 \mathrm{~cm})$.
- Do not round during calculations, but present final answers to the nearest unit requested (e.g. degrees, minutes, metres, etc.).
- Underline your final answer.
- Neatness will be a consideration in marking.
- Staple this sheet as the title page for your assignment.

Refer to the BCGS Index map (92G).
Note that the grid denotes neatlines for map sheets in the BCGS series down to a scale of $1: 5,000$. The markings on the neatline indicate latitude $\&$ longitude in degrees / minutes.

1. A $1: 5,000$ map sheet measures how many degrees/minutes/seconds in latitude? ... in longitude?
2. The neatline for map sheet 92G. 069 is bound by what latitudes and longitudes (to the nearest minute)?
3. The neatline for map sheet 92G 069.1.3 bound by what latitudes and longitudes (to the nearest minute)?
4. Mt. Mason is located in map sheet 92G.090. What is the latitude \& longitude (to the nearest $1 / 10^{\text {th }}$ of a minute) of the peak, as marked by the triangle? Be sure to measure to the centre of the triangle.
5. Convert the coordinates to decimal degrees.

## Refer to the BC Topographic (BCGS) map sheet 092F020 (Blackjack Lake)

 Note that the grid denotes the UTM grid. Along the neatline at the end of the grid lines the gray numbers (blue on the original) denote eastings and northings in metres. The black tics within the map denote latitude and longitude in degrees / minutes / seconds.Note that the UTM grid is 'tilted' in relation to the neatline. When you interpolate coordinates be sure to align your marking with the proper grid (i.e. for UTM align along with the grid whereas for latitude/longitude be sure to align with the tics).
6. What are the latitude \& longitude coordinates (nearest second) the spot height labeled "479" (located south of Chase River). Convert to decimal degrees (dd.ddd).
7. What are the UTM coordinates (nearest metre) for the spot height labeled "479" (located south of Chase River).

Refer to the NTS map sheet 92 G/7 (NAD27).
Note that the grid denotes the UTM grid. Along the neatline at the end of the grid lines the light gray numbers (blue on the original) denote eastings and northings in metres. The black bars on the neatline denote latitude and longitude in degrees and minutes. The neatline itself is defined by latitude and longitude.

Note that the UTM grid is 'tilted' in relation to the neatline. When you interpolate coordinates be sure to align your marking with the proper grid (i.e. for UTM align along with the grid whereas for latitude/longitude be sure to be 'square' with the neatline).
8. What are the latitude \& longitude coordinates (nearest second) the spot height labeled "471" (located west of Cozen Point).
9. What are the UTM coordinates (nearest metre) for the spot height labeled "471" (located west of Cozen Point)?

## Refer to the NTS map sheet 92 G/7 (NAD83).

10. What are the latitude and longitude coordinates (nearest second) for the spot height labeled "471" (located west of Cozen Point)?
11. What are the UTM coordinates (nearest metre) for the spot height labeled " 471 " (located west of Cozen Point)?
12. Compare the answers for questions $9 \& 11$. What is the difference between the two northings? ... between the two eastings? What is the straight line difference between the two datums?
