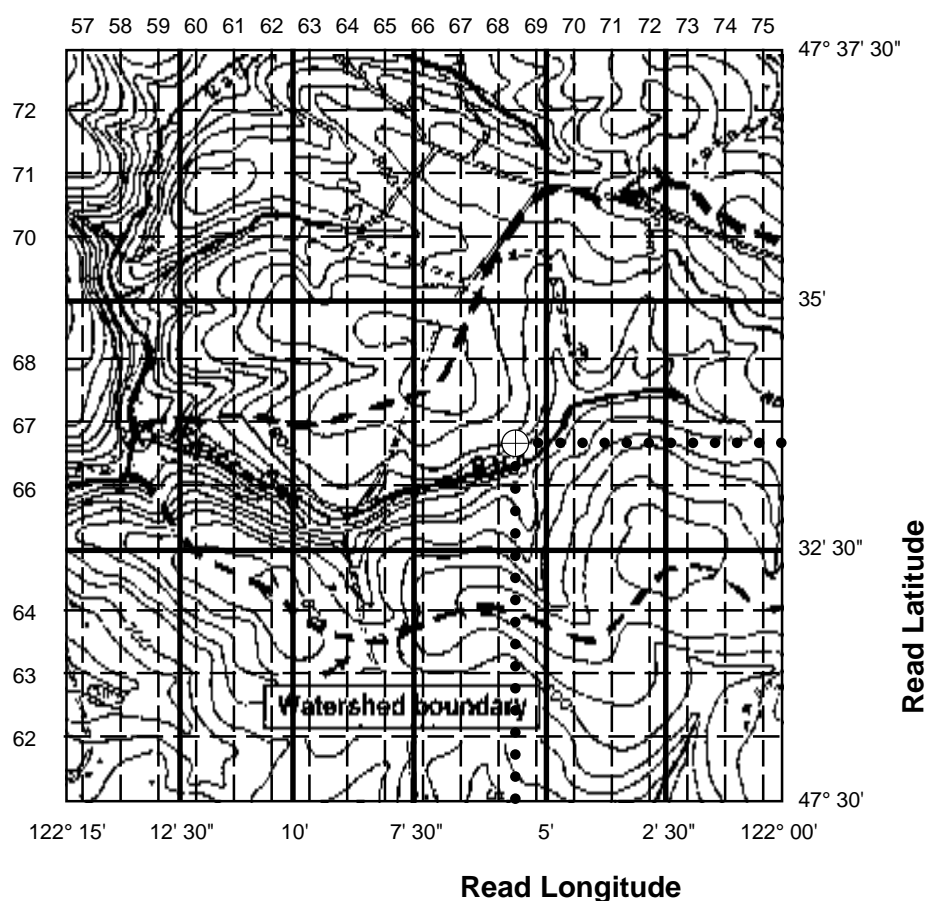


Worksheet for Calculating Latitude and Longitude

7.5 x 15 Minute Series



Your
To Determine Latitude:

Work

Example

1. Look at the right side (upper or lower corner) under the map name, or the second of two numbers separated by "x" to find the height scale (latitude) of the topo map.

If "7.5 Minute Series," enter 450

If "15 Minute Series," enter 900

If "7.5 x 15 Minute Series," enter 450

450

Your Calculation***Example***

- | | | |
|---|-------|---|
| 2. Using the ruler, measure the length of your map (exclude the map borders) north to south in centimeters (cm). | _____ | 10 cm |
| 3. Divide #1 by #2 to the nearest whole number. | _____ | $450 \div 10 = 45$ |
| 4. Enter the latitude located in the map's edge closest to your site. | _____ | $47^{\circ} 30'$ |
| 5. Using the ruler, measure from your site straight down, to the bottom of the map (in centimeters). | _____ | 4.8 cm |
| 6. Multiply #5 by #3 to the nearest whole number. | _____ | $4.8 \times 45 = 216$ |
| 7. Determine how many times 60 goes into #6 completely and what is left as the remainder (don't use a calculator for this). These answers will become the minutes and seconds of the latitude. | _____ | 60 goes into 216 completely 3 times with 36 left over.
$(3 \times 60 = 180;$
$216 - 180 = 36).$ |
| 8. Convert these numbers to minutes and seconds. Minutes are equal to the whole number determined in #7, or the number of times 60 goes into #6 completely. In other words, your whole number after the division in the previous step is the number of minutes. Seconds are equal to what is left (remainder) after the division in #7. | _____ | 3 minutes and
36 seconds =
3' 36" |
| 9. Determine the latitude of your site by adding #4 to #8. | _____ | $47^{\circ} 30' + 3' 36''$
$= 47^{\circ} 33' 36''$ |

To Determine Longitude:

1. Look at the right side (upper or lower corner) under the map name, or the second of two numbers separated by "x" to find the width scale (longitude) of the topo map.
- If "7.5 Minute Series," enter 450
 If "15 Minute Series," enter 900
 If "7.5 x 15 Minute Series," enter 900

900

Your Calculation***Example***

2. Using the ruler, measure the width of your map (exclude the map borders) east to west in centimeters (cm).

10 cm

3. Divide #1 by #2 to the nearest whole number.

 $900 \div 10 = 90$

4. Enter the longitude located in the map's lower right hand corner.

122° 00'

5. Using the ruler, measure from your site straight across, to the right hand side of the map (in centimeters).

3.7 cm

6. Multiply #5 by #3 to the nearest whole number.

 $3.7 \times 90 = 333$

7. Determine how many times 60 goes into #6 completely and what is left as the remainder (don't use a calculator for this). These answers will become the minutes and seconds of the longitude. (The longitude degrees are #4.)

60 goes into 333
completely 5 times
with 33 left over.
($5 \times 60 = 300$;
 $333 - 300 = 33$).

8. Convert to these numbers to minutes and seconds. Minutes are equal to the whole number determined in #7, or the number of times 60 goes into #6 completely. In other words, your whole number after the division in the previous step is the number of minutes. Seconds are equal to what is left (remainder) after the division in #7.

5 minutes and
33 seconds
= 5' 33"

9. Determine the longitude of your site by adding #4 to #8.

122° 00'
+ 5' 33"
= 122° 5' 33"