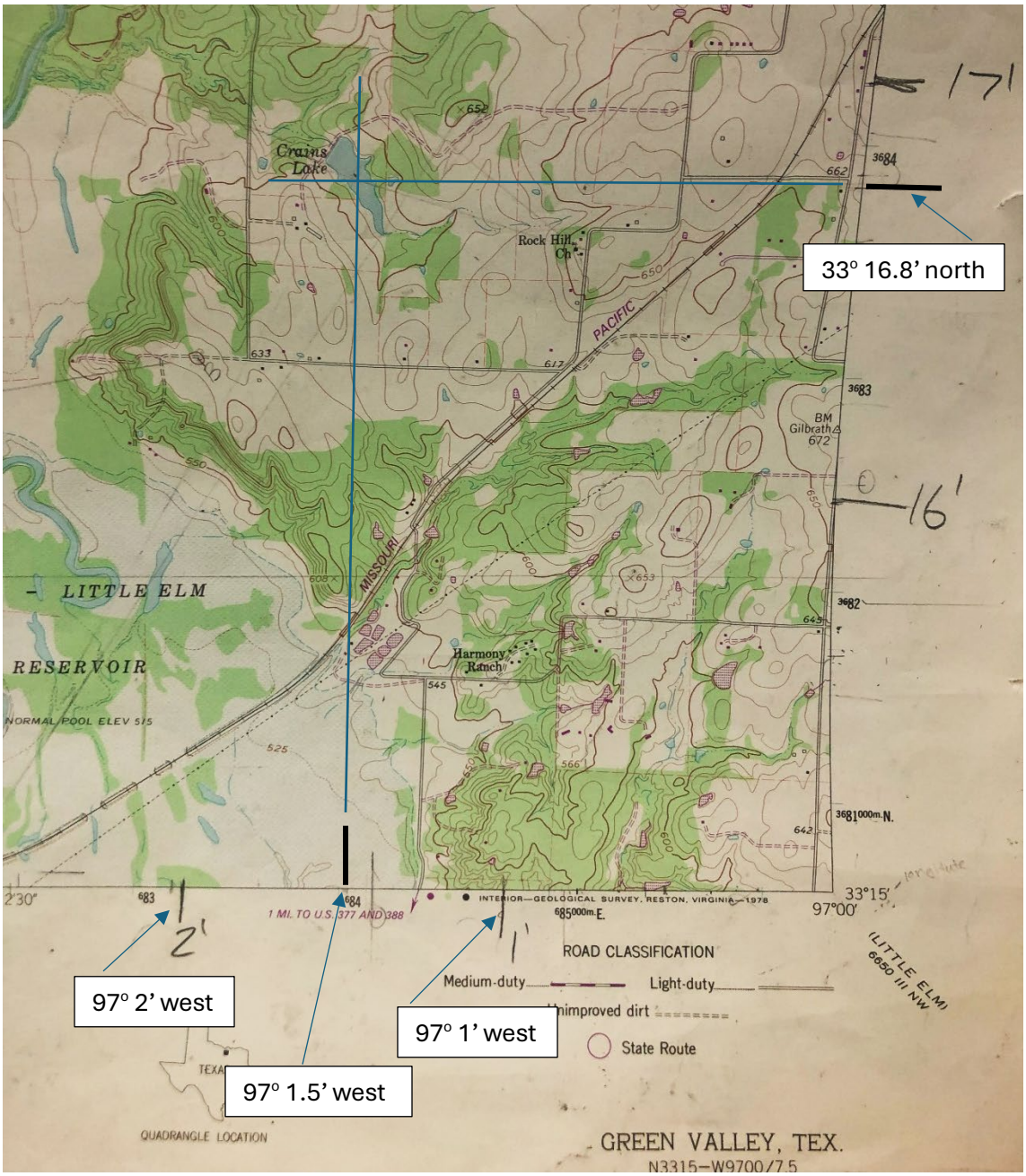
1. LATITUDE AND LONGITUDE.
1. Find the length of 1’ of longitude and 1’ of latitude (we did this in lab 2).
2. In the margin of the map mark off minutes of longitude and minutes of latitude (see examples on map below).
3. Read latitude and longitude to the nearest 1/10 of a minute (see example below). The center of Crains Lake is 97º 1.5’ west, 33º 16.8’ north.



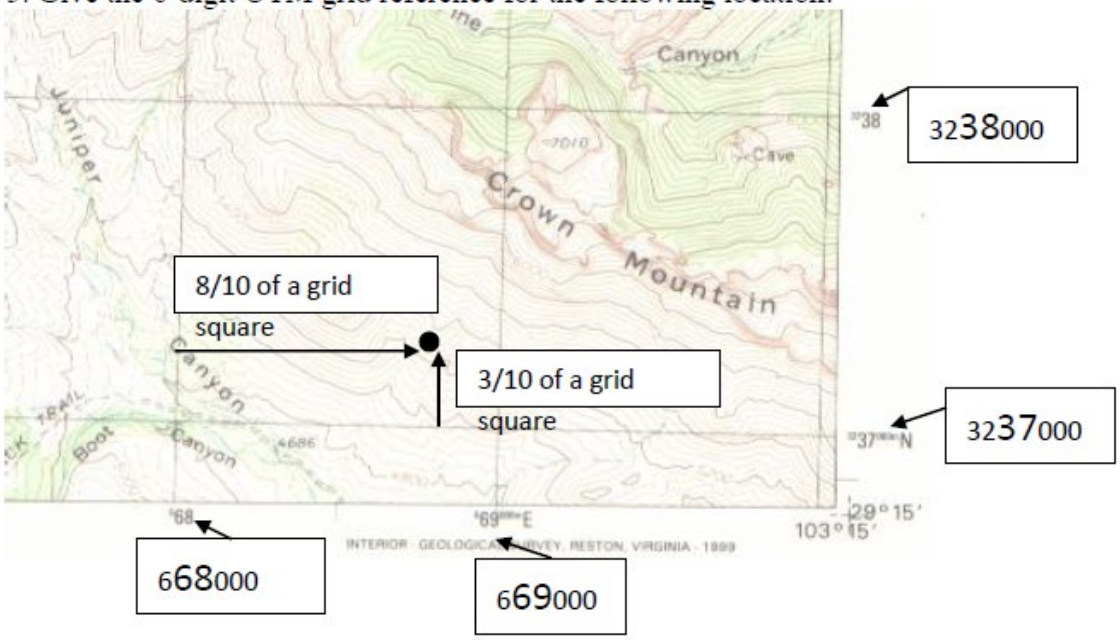
2. At 60^0 N, one degree of longitude equals 55.8 km; one degree of latitude equals 111 km. Using these equivalents, calculate the distance in km between the following locations:

60^0 00' 00" N	to	60^0 00' 00" N
133^0 22' 45" W		136^0 30' 50" W

LONGITUDE is changing. The amount of change is 3^0 8' 5". 1^0 = 55.8 km, therefore 3^0 8' 5" =
3 x 55.8
+ 8 x 55.8/60
+ 5 x 55.8/3600

= 167.4 + 7.44 + 0.0775 = 174.9175 km = <u>174.918 km</u> (round to 3 decimal places).

5. Give the 6-digit UTM grid reference for the following location:



The actual UTM reference for the point is 668800 m east, 3237300 m north. By convention, for a 6-digit UTM reference this is written as <u>688373</u> (note that the easting is always given first).