

1) We want to test to see if the average IQ at ENC is 120 or not? We take a random sample of 40 people, and observe the mean of that sample to be 125. Suppose we know that the population has a standard deviation of 15. Do the test at the 5% significance level.

2) We want to test to see if the average IQ at ENC is 120 or not? From a random sample of 20 people we find a mean of 115 and a standard deviation of 12. Do the test at the 5% significance level.

3) In order to monitor the ecological health of the Florida Everglades, various measurements are recorded at different times. The bottom temperatures are recorded at the Garfield Bight station and the mean of 30.4°C is obtained for 61 temperatures recorded on 61 different days. Assuming that $\sigma = 1.7^{\circ}\text{C}$, test the claim that the population mean is greater than 30.0°C . Use a 0.05 significance level.