Problems- Tests of one sample mean.

STATISTICS

1. TV studios insist that commercials are less than 120 minutes each evening. A sample of 100 evenings found a mean of 180 minutes- st dev=20. Is the claim by TV executives correct?

Alpha = 5%, alpha = 1%.

2.Change the sample size to question 1 to 16. Is the claim justified if alpha = 1%, alpha = 5%?

3. 100 retirees in Saranac Lake have mean longevity of 86, st dev = 10.

Is this above the national average of 84?Alpha = 1%, 5%

4. For question 3, change the sample size to 16. Redo your analysis, alpha =5%, 1%.

5. A car is advertised as having 30 miles per gallon at 55MPH. If a sample of 100 cars had a mean of 25MPG, st. dev. =10. Is the car manufacturer’s claim too high,? alpha = 1%, 5%.

6.Redo question 5 with sample size 9.

7. 36 WCC students average 20 hours work per week, st. dev. = 10.

Is this above the national average of 12 hours? Alpha = 1%, 5%.

8. Redo question 7, if sample size =4 students.

9. If the question for problem 7 was,” Is the WCC mean work hours different from the national average” , how would you adjust the analysis?