Time Frame: 50 minutes

Subject Matter: Confidence Intervals TELL ME

Objective: TSWBAT find the confidence interval for the mean when the standard deviation is known or n is greater than or equal to 30.

Standards: DA – 4.9

Materials: PowerPoint Presentation, Calculator, and Worksheets

SHOW ME

Presentation of Information

Using the statistics tool of the TI – 83 Calculator the teacher will discuss the following.

Let Me Try

1. A survey of 80 adults found that the mean age of a person’s primary vehicle is 6.5 years. Assuming the standard deviation of the population is 1.2 year, find the 95% confidence interval of the population mean.
2. A sample of the mathematics scores of 50 tenth-graders has a mean of 80. The standard deviation of the sample is 16.
   1. Find the 90% confidence interval of the mean reading scores of all tenth-graders.
   2. Find the 95% confidence interval of the mean reading scores of all tenth-graders.
3. A study of 40 NBA players showed that their average score per game was 15.4. The standard deviation of the population is 8.
   1. Find the 95% confidence interval of the mean score for all NBA players.
   2. Find the 95% confidence interval of the mean score if a sample of 80 NBA players is used instead of a sample of 40.
   3. Which interval is smaller? Explain why.
4. A random sample of the number of farms (in thousands) in various states is found below. Estimate the mean number of farms per state with 99% confidence interval.

47 95 54 33 64 4 8 57 9 80

8 90 3 49 4 44 79 80 48 16

68 7 15 21 52 6 78 109 40 50

1. Find the 95% confidence interval for the mean number of local jobs for the top corporation in South Carolina. A sample of 40 selected corporations is shown.

7,685 3,100 725 850

11,778 7,300 3,472 540

11,370 5,400 1,570 160

9,953 3,114 2,600 2,821

6,200 3,483 8,954 8

1,000 1,650 1,200 390

1,999 400 3,473 600

1,270 873 400 713

11,960 1,195 2,290 175

887 1,703 4,236 1,400

1. Find the 94% confidence interval of the population mean for the incomes of North Carolina credit unions. A random sample of 50 credit unions is shown. The data are in thousands of dollars.

84 14 31 72 26 85 24 391 72 158

49 252 104 31 8 4,340 346 19 5 846

3 18 72 23 55 461 254 125 61 123

133 16 29 225 138 60 29 10 366 47

28 254 6 77 21 97 6 17 8 82