1. The table below shows the lengths of some randomly chosen CDs in John's very large collection. Give the 95% confidence interval for the population mean, assuming that the population is approximately normally distributed. Round the endpoints to two decimal places.

71.35	60.61	50.83	60.15	47.38	65.29	56.88	36.92	43.79	43.34
55.76	64.51	74.14	55.05	40.99	49.98	48.08	43.86	36.76	60.96
37.07	47.92	47.04	48.76	56.88	72.96	55.07	67.75	51.26	43.39
52.43	42.44	71.36							

Confidence interval: (,)

2.John measured the total playing time of 31 randomly chosen CDs from his very large collection and found a mean of 72.8 minutes and a standard deviation of 10.4 minutes. Give the 97% confidence interval for the population mean, assuming that the population is approximately normally distributed. Round the endpoints to two decimal places.

Confidence interval: (,)

3. Studies have suggusted that twins, in their early years, tend to have lower IQs and pick up language more slowly than non-twins. The slower intellectual growth may be caused by benign parental neglect. Suppose it is desired to estimate the mean attention time given to twins per week by their parents. A sample of 35 sets of two-year-old twin boys was taken, and after one week the attention time received was recorded. The mean was found to be 29 hours with a standard deviation of 11.3 hours. Use this information to contruct a 93% confidence interval for the mean attention time given to all twin boys by their parents, assuming that the population is approximately normally distributed. Round the endpoints to one decimal place.

Confidence interval: (,)

4. IQ tests are designed so that the mean is 100 points and the standard deviation is 15 points for the entire adult population. What is the minimum sample size needed to estimate the average IQ of all Stat 200 students to within 1 point with 91% confidence?
5. A long history of testing water samples in a certain lake has shown that the level of a certain pollutant is approximately normally distributed with standard deviation 4.5 mg/L. What is the minimum number of samples required to estimate today's level to with in 0.5 mg/L with 90% confidence?
6. To estimate the average SAT score of incoming freshmen, the Admissions office collected the scores of fifty randomly chosen students. From previous years, they know that the population standard deviation will be 27.5. Should they use a z-interval or a t-interval, or do they not have enough information to use either?

   - **A.** They should use a t-interval
   - **B.** They do not have enough information to use either
   - **C.** They should use a z-interval

7. The Admissions office collected the SAT scores of fifty randomly chosen students, from which they found a standard deviation of 27.5. If they wish to construct a 95% confidence interval for the average score for all students, should they use a z-interval or a t-interval, or do they not have enough information to use either?

   - **A.** They should use a t-interval
   - **B.** They do not have enough information to use either
   - **C.** They should use a z-interval

8. The Admissions office collected the SAT scores of twenty randomly chosen students, from which they found a standard deviation of 27.5. If they wish to construct a 95% confidence interval for the average score for all students, should they use a z-interval or a t-interval, or do they not have enough information to use either?

- A. They should use a t-interval
- B. They should use a z-interval
- C. They do not have enough information to use either

9. A market research company wanting to determine the average quantity of nuts eaten per year by Americans interviewed 736 Americans and found a sample mean of 3.92 lb. If the company knows that the population standard deviation is 0.85, what is the 98% confidence interval for the population mean? Round your answers to two decimal places.

(,)

10. Compute, to three decimal places, a 99% confidence interval for the mean of a population with $\sigma=22.8$, given that a sample of size 43 had a mean of 56.6.

Confidence interval: (,)

11. The following data represents the number of days a random sample of patients spent in the hospital after being admitted with a dangerous virus.

19 23 25 21 18 23 19 21 20

Assuming that the number of days in the hospital is normally distributed, find a 95% confidence interval for the population mean based on this sample. Give the endpoints of your interval to three decimal places.

(,)