ACSTA 101: Section 6.1-6.2 Practice Problems

(1) An economics researcher is collecting data about grocery store employees in a county. The data listed below represents a random sample of the number of hours worked by 40 employees from several grocery stores in the county. Use a 95% confidence level to find the confidence interval for the mean number of hours worked by grocery store employees. Assume the population standard deviation is 7.9 hours.

$$
\begin{array}{cccccccccc}
30 & 26 & 33 & 26 & 26 & 33 & 31 & 31 & 21 & 37 \\
27 & 20 & 34 & 35 & 30 & 24 & 38 & 34 & 39 & 31 \\
22 & 30 & 23 & 23 & 31 & 44 & 31 & 33 & 33 & 26 \\
27 & 28 & 25 & 35 & 23 & 32 & 29 & 31 & 25 & 27
\end{array}
$$

(2) You randomly select 18 adult male athletes and measure the resting heart rate of each. The sample mean heart rate is 64 beats per minute, with a sample standard deviation of 2.5 beats per minute. Assuming the heart rates are normally distributed, construct a 90% confidence interval for the population mean heart rate.

(3) In a random sample of 50 people, the mean body mass index (BMI) was 27.7 and the standard deviation was 6.12. Construct a 95% confidence interval for the population mean.

(4) In a recent Indian Premier League season, the population standard deviation of the deliveries faced to score fifty runs for all batsmen was 6.37. The deliveries per fifty of 10 randomly selected batsmen are listed. Assume the deliveries per fifty are normally distributed. Construct a 95% confidence interval for the population mean.

$$15 \quad 19 \quad 20 \quad 22 \quad 23 \quad 25 \quad 29 \quad 32 \quad 36 \quad 49$$