

1. A study is conducted with a 95% confidence interval resulting in  $1.52 < \mu < 2.64$ . Identify the sample mean and the margin of error.
2. You are looking to complete a study that analyzes the levels of carbon dioxide in the air. You take a random sample of 55 readings and know that the average level is 1.675 ppm with a standard deviation of 0.57 ppm. Find a 90% confidence interval for your study.
3. For the study in problem 2, what is the margin of error?
4. If we increased the level of confidence to 92%, what should happen to your interval? Why?
5. A sample of size  $n = 100$  produced the sample mean of  $\bar{x} = 16$ . Assuming the population standard deviation  $\sigma = 3$ , compute a 95% confidence interval for the population mean  $\mu$ .

