

**I can...**

1. Identify the sample and the population in a given sampling or experimental situation.
2. Explain the difference between a sample and a population.
3. State the sample proportion in percent form given the sample size and number of positive responses.
4. Analyze a sampling situation and identify sources of bias.
5. Identify several examples of sampling that occur in our society and explain why polls and surveys are so common.
6. Generate the first several members of a sample using a table of random digits.
7. Generate the first several members of a sample using the RandInt( operation on the TI calculator.
8. Calculate the margin of error at the 95% confidence level using the quick method.
9. Using the margin of error, state what the poll/survey/study would conclude about the population for the statistic being measured in their sample.
10. Explain what 95% confident means in the context of a problem.
11. Explain why it is hard to get random samples today and what polling organizations and companies do to try to remedy the situation.
12. Explain the difference between a poll/survey/study and an experiment.
13. Explain the difference between the experimental group, the control group and the placebo group in an experiment.
14. Explain why double blindness is desirable in an experiment.
15. Identify possible confounding variables in an experiment.
16. Suggest ways to eliminate possible confounding in an experiment.
17. Explain how to set up a randomized comparative experiment given  $x$  volunteers.
18. Explain what a “statistically significant” difference is in the context of an experiment.
19. Explain what is needed to produce convincing statistical evidence of cause and effect. (And when only correlation can be determined.)
20. Calculate the mean, median and mode for a set of data.
21. Create a frequency diagram (dot plot, histogram and stem and leaf plot) for a set of data.
22. Read and interpret a frequency diagram (dot plot, histogram and stem and leaf plot.)
23. Identify a distribution as symmetric, skewed right, or skewed left from its histogram.
24. Calculate the 5-number summary for a set of data.
25. Use the 5-number summary to create a box plot displaying a set of data.
26. Answer questions about set(s) of data from side-by-side box plots regarding quartiles, range, comparisons between data sets.
27. Identify possible outliers from a set of data or graph.
28. Explain how outliers affect the mean and median.
29. Generate a set of data to meet a given number of observations, a given mean and a given median.