

## Discrete Data and Statistics Learning Goals- Part 1

2014-15 Bell

Use the following learning goals to prepare for the quiz on \_\_\_\_\_.  
Also review your notes, homework, class work and pop quiz.

### 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 who George Gallup was and what he did to earn the name of the current polling company Gallup.
13. Explain the difference between a poll/survey/study and an experiment.
14. Explain the difference between the experimental group, the control group and the placebo group in an experiment.
15. Explain why double blindness is desirable in an experiment.
16. Identify possible confounding variables in an experiment.
17. Suggest ways to eliminate possible confounding in an experiment.
18. Explain how to set up a randomized comparative experiment given x volunteers.
19. Explain what a “statistically significant” difference is in the context of an experiment.
20. Explain what is needed to produce convincing statistical evidence of cause and effect. (And when only correlation can be determined.)
21. After reading a news story or summary about a study (surveys and experiments)
  - state the conclusion that the researchers came to
  - identify possible sources of bias
  - identify possible confounding variables
  - pose follow-up questions that you would want to find the answers to before deciding whether you agree or disagree with correlation or casual relationship suggested by the survey or experiment data and researchers.
  - name people that might be interested in the study and decisions or policies that it might inform. Be able to be specific.
  - suggest a follow-up study that might be done based on these results
22. Calculate the mean, median and mode for a set of data.