For the Unit 8 lab you will use a random sample of 100 students from a StatCrunchU. StatCrunchU is a fictitious virtual population of 46,000 students.

Instructions for accessing your data: To access StatCrunchU, log into StatCrunch and click on **Resources**. Scroll down to the heading **Take a sample from StatCrunchU** and click on **StatCrunchU**.

You will see a student survey with 6 questions. This is a fictitious survey that was answered by each of the 46,000 fictitious students at StatCrunch U.

Below the survey you can set the sample size. Set this to 100 and click Survey. A spreadsheet will appear with the survey results for your random sample of 100 StatCrunchU students.

Note: Your sample is a random sample; therefore, your results will differ somewhat from other students' results.

Instructions for the lab assignment:

1) How many females are in your sample? How many males? What proportion of your sample is female? What proportion of your sample is male? (StatCrunch steps: Stat, Tables, Frequency)

2) Is there an equal proportion of men and women at StatCrunchU?

   a) Show that the conditions are met for the use of a normal model for a hypothesis test ($np \geq 10$ and $n(1 - p) \geq 10$, where p is from the null hypothesis).

   b) Use StatCrunch to test the claim that the proportion of females at StatCrunchU is equal to the proportion of men. Paste the StatCrunch printout below. (StatCrunch steps: Stat, Proportion Stats, One Sample, With Data. To copy click on Options.)

   c) Write a conclusion to your hypothesis test referring to females at StatCrunchU.

   d) Explain what the P-value means as a probability that refers to random samples of 100 StatCrunchU students.

3) What are the proportions of females and males at StatCrunchU?

   a) Show that the conditions are met for the use of a normal model for a confidence interval (count of successes and failures are greater than 10).

   b) Determine a range of plausible values for this proportion by using StatCrunch to find a 95% confidence interval. Paste the StatCrunch printout below. (StatCrunch steps: Stat, Proportion Stats, One Sample, With Data.)

   c) Interpret your interval referring to females at StatCrunchU.

   d) Explain what is meant by "95% confident."

4) Does your confidence interval support your hypothesis test? Explain.