Group Members: _____

1. Taylor wants to estimate the true proportion of undergraduate students at Clemson University who watch *Game of Thrones*. She randomly selects 450 Clemson undergraduate students and finds that 157 of them are dedicated *Game of Thrones* fans and watch the show regularly.

   (a) Find a **point estimate** for the true proportion of Clemson students who watch *Game of Thrones*. Label your value with the appropriate symbol and round your point estimate to four decimal places.

   (b) Determine whether the **two conditions** for inference using confidence intervals are met.

   (c) Find the **critical value** associated with a 94% confidence level. You can do so either using the standard normal table or the `invNorm` function in your calculator. (Drawing a sketch may be helpful.)

   (d) Find a **94% confidence interval** for the true proportion of Clemson students who watch *Game of Thrones* based on the information gathered from Taylor's sample. **Show your work** by writing the confidence interval formula with the appropriate values plugged in. Round your final values to four decimal places and write your answer in interval notation.

   (e) **Interpret** the confidence interval you found in Part (d).

2. Taylor wants to expand her study. What is the **minimum** number of students that she would need to sample in order to generate a 99% confidence interval with a 5% margin of error? You can use your point estimate from Problem #1 in your calculations. **Show your work** and include units in your answer.