MTH 105: Final Review Part 3

- The final exam is Monday December 9th from 12-1:50 pm.

- The exam is comprehensive covering material from Chapters 1,8,9,and 10.

- You may use two 3×5 notecards (both sides) and a calculator on this exam. No cell phones.

- Study old homework problems (if you have done them online you will be allowed to see solutions. If you have not done the problems, do so!).

- Study the review sheets and in-class review problems from the first two exams. This material is posted on our website.

- Study the in-class review sheets from the past two class days (posted on website - answers will be posted by Saturday).

Below are some extra problems on probability and confidence intervals.

1. You flip a coin 4 times. You are told there are no tails showing. What is the probability of all heads?

2. You flip three coins. What is the probability of at least one head?

3. You deal three cards, without replacement, from a standard 52 card deck. What is the probability that you get three diamonds?

4. You deal three cards, without replacement, from a standard 52 card deck. What is the probability that you get at least one diamond?

5. In a small town lotto game, three numbers are chosen at random from 15 numbers. If the ticket matches the numbers in any order you win.

   (a) What is the probabiliy that a ticket is a winner?

   (b) Suppose a ticket costs $5. If you match all three numbers you win $5,000. What is the expected value of the game?

6. How many ways are there to choose a president, vice president, and treasurer from a group of 10 people?

7. How many ways are there to choose a committee of three people from a group of 10 people?

8. A survey was conducted to find what proportion of people were looking forward to the holiday season. In a random sample of 250 people 185 said they were looking forward to the holiday season. Find a 95% confidence interval for the proportion of people who are looking forward to the holiday season.

9. A survey was conducted to find the proportion of WOU students who felt ready for their final exams. In a random sample of 80 students, 56% said they were ready. Give a 95% confidence interval for the proportion of WOU students who are ready for their final exams.

10. Which is wider - a 95% confidence interval or a 85% confidence interval (using the same data for both).

11. A 95% confidence interval with a margin of error of $\pm$ 4% found that 51% of eligible voters would elect Candidate A in the upcoming election. Should Candidate A be confident she is going to win? Explain.