

MTH 105: Final Review Part 2

1. Each team in a new basketball league will play three games against each of the other teams. There are seven teams: the Antelopes, the Bears, the Cubs, the Dusters, the Eagles, the Foxes, and the Goats. How many games will be played in all?
2. The average (mean) of ten test scores is 79.2. The average of the lowest three scores is 62. What is the average of the other seven scores?
3. Construct a data set where 80% of the values are below the average. What is the median of your data set?
4. Graphs and means.
 - (a) Make a sketch of graphs with the following shapes: normal, skewed left, bimodal, uniform.
 - (b) For which of the graph(s) in (a) would you expect the mean of the data to be equal to the median?
5. You conducted a survey and found that 45% of people prefer coke over pepsi with a margin of error of $\pm 3\%$ at the 95% confidence level. Based on these results, can you predict which cola most people prefer? Explain.
6. You are the owner of a restaurant and are considering adding ice cream to your dessert menu. You want to survey people to see if they would order this tasty treat. How many people should you ask to get a 95% confidence interval with an error of no more than 3%?
7. You play a game where two dice are rolled. If you roll doubles you win \$10; if you get an odd sum you pay \$2; in all other cases you win \$0. Is this a fair game? Explain.
8. You want to buy a 5 year CD. You go in expecting to put \$2000 down for an annual interest rate of 3%. The bank tells you that if you put \$4000 down, they will increase the interest rate to 3.5%. How much more money would you make if you took the higher interest rate offer?
9. You want to purchase a \$450,000 home. You have \$40,000 saved up to put down on the house.
 - (a) If you get a 15 year mortgage with an annual interest rate of 3.5%, how much will your monthly mortgage payments be? In the end, how much money will you spend on the purchase of your home?
 - (b) If you get a 30 year mortgage with an annual interest rate of 4.3%, how much will your monthly mortgage payments be? In the end, how much money will you spend on your home?