Assignment 7 - Due Monday March 30

(1) **Picture Slots** A slot machine shows a sequence of four pictures which are each randomly chosen from a set of ten pictures. You win money when the machine produces at least two matching pictures.
  (a) What is the total number of possible outcomes for the machine?
  (b) What is the probability of winning something with this slot machine?
  (c) What is the probablity of having exactly 3 matching pictures?
  (d) What is the probability of having 4 matching images?

(2) Dicey Questions Suppose that you roll a pair of fair dice.
  (a) What is the probability of rolling a sum of 7 or 11?
  (b) What is the probability of rolling a double (two 1's, two 2's, etc.)?
  (c) What is the probability of rolling a sum that is more than 4?

(3) **Hidden Coins** Suppose that someone else tosses a coin twice.
  (a) If the person tells you that the first coin was heads, what is the probability that the person tossed two heads?
  (b) if the person tells you that one of the coin tosses gave heads, what is the probability that the person tossed two heads?

(4) **Car Count** You wonder how many cars there are in your area. You call up the Honda dealership and ask how many Honda's they have sold. They report that they have sold a total of 10,000 cars. You then take a lawn chair and camp out on the most traveled roadway in town and count cars. You count 800 cars and 250 of them are Honda's.
  (a) Estimate the number of cars in your area.
  (b) Do you believe that you would have gotten more, less, or the same accuracy if you had called the Rolls-Royce dealership instead of the Honda? Explain.

(5) **Our Class** With the data from our class survey (which are available on the website under Course Downloads) choose four questions that are interesting to you. For each question, graph the responses (either as a pie chart or with frequency bars, as seems most appropriate), compute the mean and the median of the responses if appropriate, and write a complete, self-contained sentence summarizing what you have discovered about the class from those responses and the graphs and summary statistics.