1. A survey of high school students indicated that 33% are in a relationship, 25% are involved in sports, and 11% are involved in both. Use the information to answer the following questions.

   (a) What is the probability that a student is involved in a relationship **given** that they're involved in sports?

   (b) Is being in a relationship **independent** of being involved in sports? Justify your answer using probability (regardless of your own personal theories!).

2. A company has two suppliers for electrical components. China ships 73% of the electrical components used by the supplier. The probability that the component will be defective **given** that it was shipped from China is 0.06. What is the probability that a randomly selected component received by the supplier will ship from China **and** be defective?

3. You have a standard deck of 52 cards. Recall that a deck of cards has four suites (hearts, diamonds, spades, clubs), each with thirteen values (2-10, J, Q, K, A). Find the probability that you draw two aces **in a row** without replacing the first ace.

4. Your Pie, a great pizza place in Clemson, has 10 vegetable and 8 meat toppings to choose from. You have a coupon for a free pizza with five toppings. Use this information to answer the following questions.

   (a) How many ways could you choose five **different toppings**? (Hint: Use the Combinations Rule.)

   (b) How many ways could you choose five **different vegetable toppings**?

   (c) If you randomly select toppings, what is the **probability** that you choose five different vegetable toppings? Round your answer to four decimal places. (Hint: Use your answers from parts a and b.)