

Due: Today

- (1) It's dark and you need a pair of socks. Your drawer contains 12 pairs of socks, but none of the pairs are matched together. What is the probability that you randomly choose two socks that match?

What is the minimum number of socks you must choose in order to guarantee a match?

- (2) What is the probability that a person who reaches into her purse, pulls out four coins, and flips them gets four tails?

- (3) A magician has three coins in her pocket. One is a standard coin, one is a double-headed coin, and one is a double-tailed coin. She reaches into her pocket, pulls out a coin and flips it. It shows tails. What are the chances that it is the double-tailed coin?

- (4) A *Fibonacci* die used in some games has sides with numbers 1, 1, 2, 3, 5, and 8. What is the probability that two *Fibonacci* dice are tossed and the result is an odd number?

- (5) You roll **two** standard dice.

- Find the probability that you roll a 5.
- Find the probability that your roll is a 5, 7, or 9.
- Find the probability that your roll is at most 8.

- (6) You roll **three** standard dice.

- Find the probability that you roll a 5.
- Find the probability that you roll a 2.

- (7) Using all of your past group assignment grades, what is the **empirical** probability that you will score a 2/2 on this assignment?

- (8) A raffle is conducted by drawing tickets from a hat. There are 100 tickets, and 20 of them win prizes. What is the probability that one can win two prizes by selecting three tickets?

Hint: you're going to need a giant tree diagram.

- (9) There are 175,760,000 possible configurations of PA license plates.

What is the probability that you walk down the street this afternoon and happen to see . . .

- A car with the license plate NGH-2845?
- A car with an even numbered 4-digit code?
- A car with a 4-digit code that is divisible by 5?