

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?

Probability: _____

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

Number: _____

- (2) 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?
- (3) You roll **three** dice. Find the probability that the outcome is a 5.
- (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) Using all of your past group assignment grades, what is the **empirical** probability that you score a $2/2$ on this assignment?
- (6) 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?
- (7) It is estimated the 7 out of 1000 US adults are incarcerated. If two US adults are selected at random, what is the probability that they are both incarcerated? (Hint: imagine a *giant* probability tree.)