Last name _____

First name _____

LARSON—MATH 350—CLASSROOM WORKSHEET 17
Combinatorial Probability

Review

- What is a *experiment*, *sample space* S, *event*, *uniform sample space*, *probability* of an event E in a uniform sample space $P(E)$.
- Why is $0 \leq P(E) \leq 1$?
- What is the *complement* $\bar{E}$ of an event E?
- Why does $P(\bar{E}) = 1 - P(E)$?

Two events A and B are *independent* if

$$P(A \cap B) = P(A) \cdot P(B)$$

Consider the experiment of flipping a coin 5 times. Assume heads and tails are equally likely on each toss.

1. What is the total number of possible outcomes of this experiment?

2. What is the probability of getting exactly 1 head?

3. What is the probability of getting exactly 3 heads?

4. What is the probability of getting exactly 5 heads?

5. Find the probability of getting an odd number of heads.

6. Find the probability of getting an even number of heads.

7. Are the events of getting an odd number of heads and an even number of heads independent?

8. Graph the *probability distribution* for flipping a fair coin 5 times (graph the sample space outcomes on the x-axis and their probabilities on the y-axis).