01 Probability

**probability** – P(event) – tells how likely it is that something will occur

**outcome** – The result of a single trial

**event** – any outcome or group of outcomes

**sample space** – all of the possible outcomes

**theoretical probability** – 

**complement of an event** – P(not event) the probability of an event and its complement = 1 or 100%

**experimental (empirical) probability** –

**independent events –** Events that do not influence one another

* with replacement
* Two separate objects

**dependent events –** Events that influence each other

* without replacement

**finding theoretical probability**

1. find the number of favorable outcomes and the total number of outcomes
2. put information into definition simplify the fraction

**finding experimental (empirical) probability**

1. find the number of times the event occurred and the number of times the experiment was performed
2. put into definition
3. to write as percent top ÷ bottom x 100 = %

**using experimental probability**

prediction = probability (in fraction or decimal form) x # of items



**probability of two independent events** – If A and B are independent events, P(A and B) = P(A)•P(B)

**probability of two dependent events** – if A and B are dependent events, P(A then B) = P(A)•P(B after A)

* + - Total number will change because A has been removed
    - If B and A are the same event don’t forget to reduce the favorable outcomes by one when doing the second probability