Theoretical & Experimental Probability

Probability: The probability of an event, or P(event), means how likely it is that something will happen.

Outcome: The result of a single trial. For example, rolling a number cube.

Sample Space: The sample space is a visual showing a list of all of the possible outcomes.

Event: An event is an outcome or a group of outcomes.

Theoretical Probability: P(event) = # of favorable outcomes
                                              # of possible outcomes

Please NOTE:
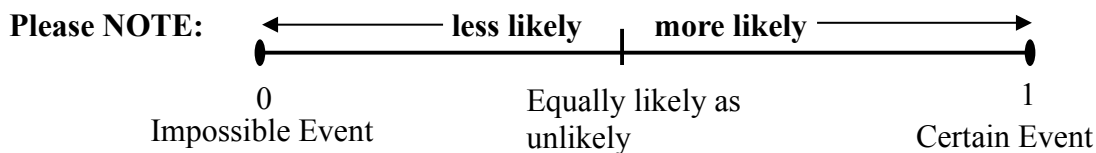
Complement of an Event: The complement of an event consists of all of the outcomes NOT in the event.

$$P(event) + P(NOT\ event) = 1 \qquad or \qquad P(NOT\ event) = 1 - P(event)$$

Odds: Odds describes the likelihood of an event by comparing favorable and unfavorable outcomes.

   Odds in favor of an event ⟶   # of favorable outcomes TO # of unfavorable outcomes

   Odds against of an event ⟶   # of unfavorable outcomes TO # of favorable outcomes

Experimental Probability: P(event) =   # of times an event occurs
                                          # of times the experiment is done