



Vocabulary: Independent and Dependent Events



Vocabulary

- Dependent events – a sequence of events in which the probability of each event depends on previous outcomes.
 - Receiving two aces in a row from a deck of cards is an example of dependent events because the second ace becomes less likely after the first ace is dealt.
- Event – a set of outcomes.
 - An event with one outcome is a *simple event*.
 - An event with two or more outcomes is a *compound event*.
- Experimental probability – probability that is derived from experimental outcomes.
 - If an outcome occurs x times in y trials, its experimental probability is $\frac{x}{y}$.
 - For example, if a coin is flipped 50 times and lands on heads 23 times, the experimental probability of heads is $\frac{23}{50}$.
- Independent events – a sequence of events in which the probability of each event does not depend on previous outcomes.
 - Flipping “heads” on a coin two times in a row is an example of independent events because the first “heads” does not affect the likelihood of the second one.
- Outcome – a single result of an experiment.
- Probability – the likelihood of an event, expressed as a number between 0 and 1.
 - A probability of 0 (or 0%) means that the event is impossible.
 - A probability of 1 (or 100%) means that the event is certain.
 - A probability of $\frac{2}{5}$ (or 0.40, or 40%) means that an event will occur about 2 times out of every 5 trials, or 40% of the time.
- Sample space – the set of all possible outcomes of an experiment.
- Theoretical probability – probability that is derived from logic and calculation.
 - If all outcomes are equally likely, the theoretical probability of an outcome is equal to 1 divided by the number of possible outcomes.
 - For example, the theoretical probability of rolling a “4” on a 6-sided number cube is $\frac{1}{6}$, or about 0.167 (16.7%).

