AP Statistics

2019-01-31 5.3 Conditional Probability & Independence

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Conditional Probability is the probability that one event happens given that another event is already known to have happened

  If we know A has occured, then the P of B given that A has already happened is denoted as:

   $P(B|A)$

   The pipe can be read as "given that" or "under the condition that"

   $P(B|A) = P(A \cap B)/P(B)$

Events are **independent** when they do not affect the likelihood of either.

  $P(A|B) = P(A)$

  and

  $P(B|A) = P(B)$

A **tree diagram** models chance behavior "splitting from the whole."

  When traversing the tree to find probabilities of aggregates, multiply

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