

Independence.

1. Independent: If A and B are two events, then saying they are independent means that they do not affect each others' P, i.e. $P(A|B) = P(A)$, $P(B|A) = P(B)$.

1) Independence: $P(A \cap B) = P(A) \cdot P(B)$.
 $\hookrightarrow P(A|B) \cdot P(B) = P(A) \cdot P(B)$.

2) If A and B are independent, and $P(B) > 0$, then $P(A|B) = P(A)$.

3) In general, a collection A_1, A_2, A_3, \dots of events are called independent if $P(A_{i_1} \cap A_{i_2} \cap \dots \cap A_{i_k}) = P(A_{i_1}) \cdot P(A_{i_2}) \dots P(A_{i_k})$ for any subcollection of events.

If truly independent, we can always multiply the probability.



