1. P(E|F) \* P(F) = P(E**∩**F)
2. If E and F are independent events, P(E) \* P(F) = P(E**∩**F)

In other words, when E and F are independent events, P(E|F) = P(E).

1. Three events E, F and G are said to be independent if

* P(E**∩**F**∩**G) = P(E) \* P(F) \* P(G)
* P(E**∩**F) = P(E) \* P(F)
* P(E**∩**G) = P(E) \* P(G)
* P(F**∩**G) = P(F) \* P(G)

1. P(E) = P(E**∩**F) U P(E **∩** Fc)

In the above formula, each conditional probability is weighted by the probability of the event on which it is conditioned.

1. P(E) = P(E|F1)\*P(F1) + P(E|F2)\*P(F2) + … + P(E|Fk )\*P(Fk )
2. For mutually exclusive and exhaustive events, F1, F2…Fk

This is known as Baye’s rule/theorem.

1. If P(A|B) > P(A) then P(B|A) > P(B)
2. If A ⊂ B then P(B|A) = 1
3. If two events A and B are independent events of a random experiment, then A and B cannot be disjoint, unless P(A)=0 and P(B)=0