

MT11 224 1/27/23

- Given events A and B,

Conditional probability of a given A is the probability of A , knowing B has occurred

$$P(A|B) = \frac{P(A \cap B)}{P(B)}$$

* if A and B are independent

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

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

because

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

if independent

therefore

$$P(A|B) = \frac{P(A)P(B)}{P(B)} = P(A)$$

similarly,

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