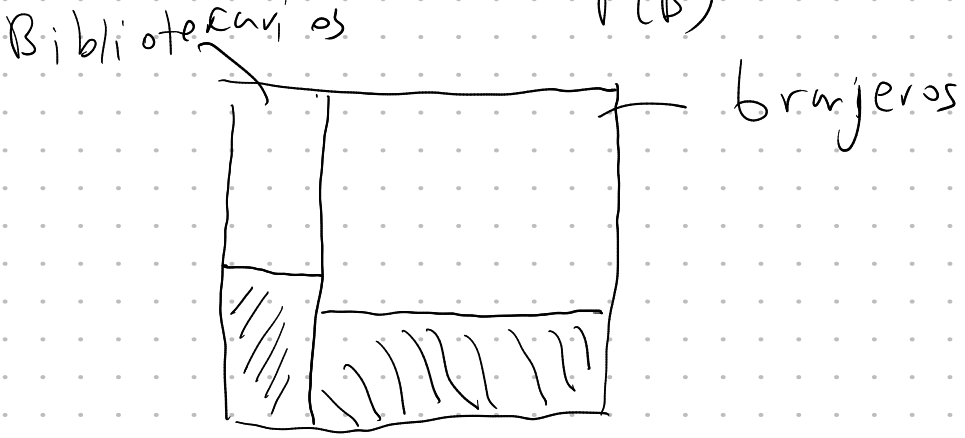
Camilo { Organizado, Tímido, Meticuloso }

Qué es más probable:

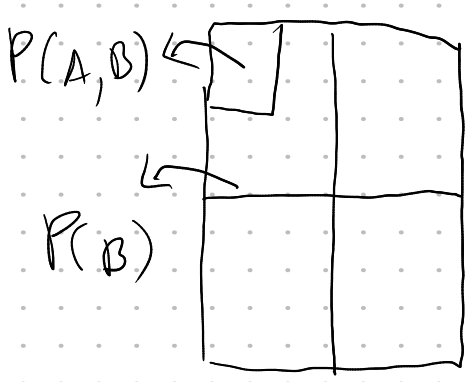
Bibliotecario Granjero

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



$P(\text{Organizado} \mid \text{Bibliotecario}) =$

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



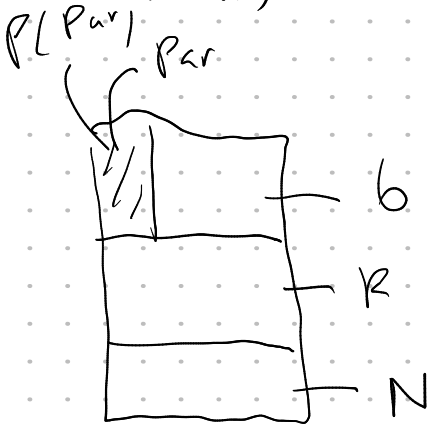
1

1 2 3 4 7 8 10 15

6 R N

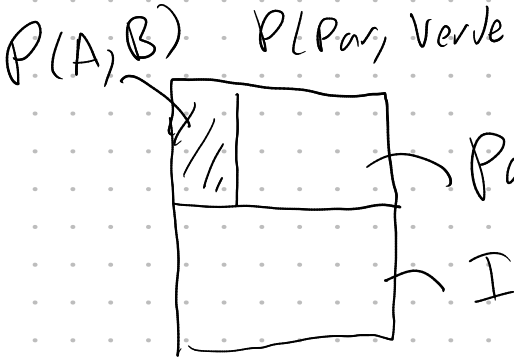
$$P(\text{Par} \mid \text{green}) = \frac{1}{3} = \frac{P(\text{Par}, \text{Verde})}{P(\text{Verde})}$$

$$= \frac{1/8}{3/8} = 1/3$$



$$P(A, B) = P(A \mid B) P(B)$$

$A = \text{Par}, \quad B = \text{Verde}$



$$P(A, B) = P(B \mid A) P(A)$$

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

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

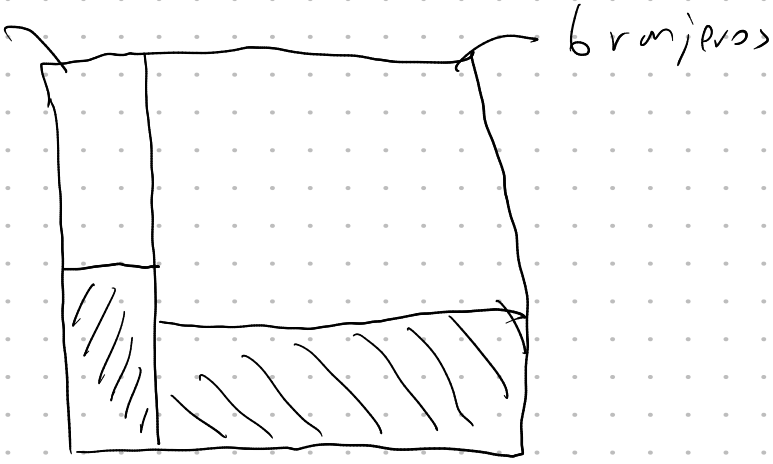
; Teorema de Bayes

$$P(A|B) = \frac{P(B|A)\,P(A)}{P(B)}$$ ¡ Teorema de Bayes

Prior

$P(\text{Bibliotecario})$

$P(\text{Bibli} \mid \text{Organizado}) =$



Write a function that receives $P(X|Y)$ and $P(Y)$ and returns $P(X)$

Datos, $P(X|Y)$ $P(Y)$ $\Rightarrow$

Pregunta: $P(X)$

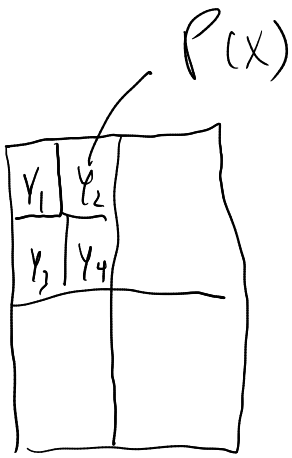
$$P(X|Y) = \frac{P(Y|X)\,P(X)}{P(Y)}$$

$$P(X)\,P(Y|X) = P(X|Y)\,P(Y)$$

$$\sum_{Y_i} P(X)\,P(Y|X) = \sum_{Y_i} P(X|Y)\,P(Y)$$

$$P(X)\sum_{Y_i} P(Y|X) = \sum_{Y_i} P(X|Y)\,P(Y)$$

$$P(X) = \sum_{Y_i} P(X|Y)\,P(Y)$$



Assume that X is a random variable that takes values in the set $\{0, 1, \ldots, n-1\}$. Write a function that receives $P(X)$ and calculates $E[X^2] - E[X]^2$