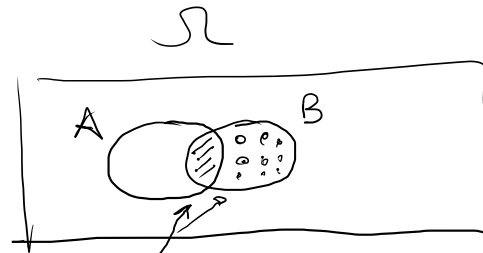$$P(A^c \cap B) = P(B) - P(A \cap B)$$

perchè $\boxed{P(A \cap B) + P(A^c \cap B) = P(B)}$

$P(B) = 1$

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

$P(A|B) = \dfrac{P(A \cap B)}{\underset{=1}{\underbrace{P(B)}}} = P(A \cap B) = P(A)$

$P(A) = \underbrace{P(A \cap B)} + \underbrace{P(A \cap B^c)}_{=0}$

$P(B^c) = 0$

perchè

$A \cap B^c \subset B^c$