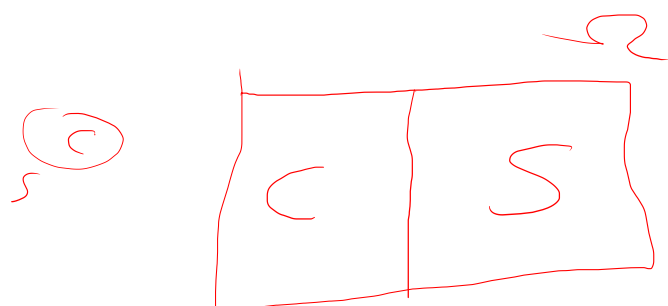


$$a_A = a_1 l_1$$

$$P_A = 2a_1 + 2l_1$$



$$P(\Omega) = 1$$

↓

$$P(\Omega) = 1$$

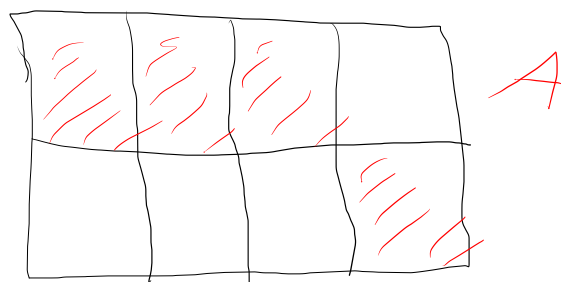
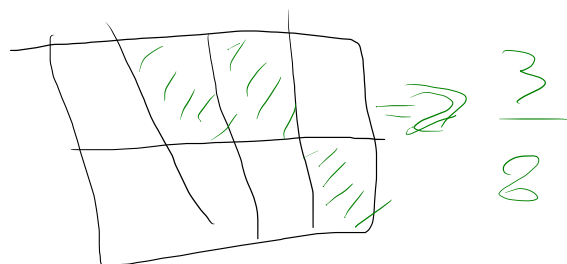
$$P(C) = 0,5$$

$$P(S) = 0,5$$

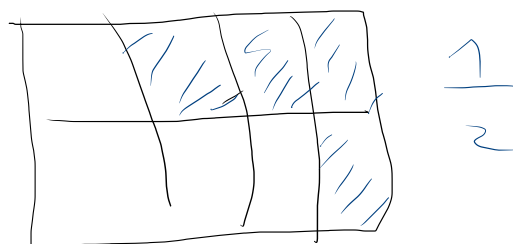
C S S
 C C S
 C C C
 S C C
 S S C
 S S S
 S C S
 C S C

$$8 = 2^3 = |\Omega|$$

$$C = A \cap B$$



$$\frac{4}{8} \Rightarrow P(C^c) = \frac{1}{2}$$



$$P(2C) = \frac{1}{2}$$

$X = \{ \# \text{ Cards in 3 long. d. molecular eq} \}$

$X \begin{matrix} \nearrow \\ \nearrow \\ \searrow \\ \searrow \end{matrix} \begin{matrix} 0 \longrightarrow IP(X=0) = \frac{1}{8} \\ 1 \longrightarrow IP(X=1) = \frac{3}{8} \\ 2 \longrightarrow IP(X=2) = \frac{3}{8} \\ 3 \longrightarrow IP(X=3) = \frac{1}{8} \end{matrix}$

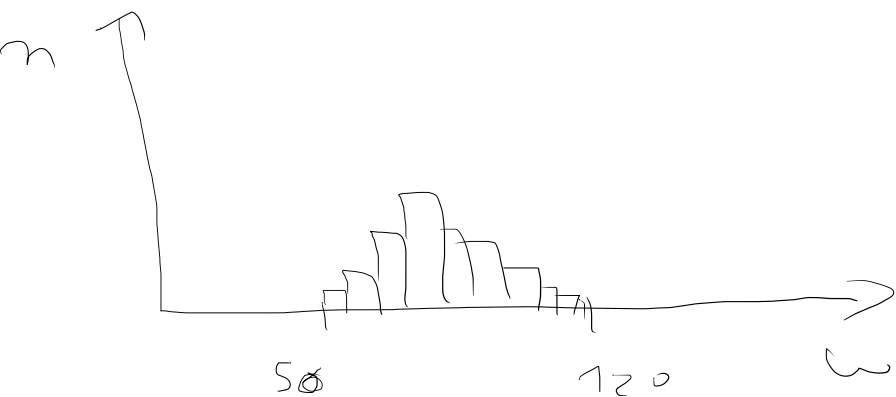
$$E(X) = \sum_{i=1}^n X_i \cdot IP(X = X_i)$$

$$\begin{aligned} E(X) &= 0 \cdot \frac{1}{8} + 1 \cdot \frac{3}{8} + \\ &\quad 2 \cdot \frac{3}{8} + 3 \cdot \frac{1}{8} \\ &= \frac{3 + 6 + 3}{8} \\ &= \frac{12}{8} = 1 \frac{4}{8} \\ &= 1.5 \end{aligned}$$

$$X = \{ \text{pessoa}(u) \text{ de uma} \\ \text{pessoa de} \\ \text{TT} \}$$

$$\Omega = \{ \overset{p \text{ de}}{\text{TT}} \}$$

$$\begin{aligned} E(X) &= \sum_{i=1}^n X_i \cdot P(X=X_i) \\ &= \int_{\Omega} x \cdot \underbrace{P(X=x)}_{d_x} dx \end{aligned}$$

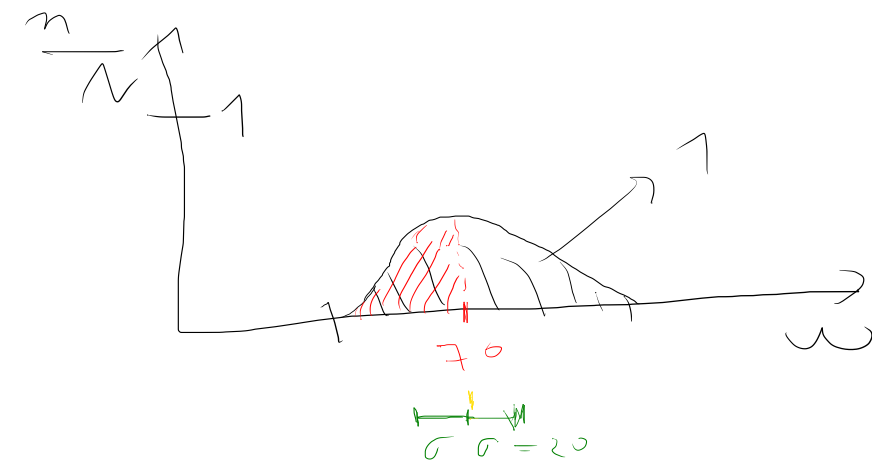


$$F_x(y)$$



$$P(X \leq y)$$

$$CDF(y) = P(X \leq y)$$



ad

$$P(X \leq 70) = 0,4$$

CDF(70)

$$X = \{A\}$$

$$X = \{ \# \text{ votes per candidate } x \}$$

$$X_1 \quad X_2 \quad X_3 \quad \dots \quad X_n$$

$$\bar{X} = \frac{1}{n} \sum_{i=1}^n X_i \xrightarrow{n \rightarrow \infty} \mu = E(X)$$

$$\text{Var}(X) = E\left(\underbrace{(X - E(X))}_{\mu}^2\right)$$



$$\text{STD}(X) = \sqrt{\text{Var}(X)}$$