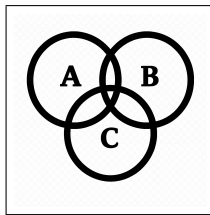




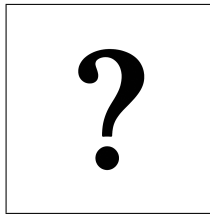
Bernoulli Trials



$$\begin{aligned}n &= 2 \\ p &= 0.50 \\ k &= 1\end{aligned}$$



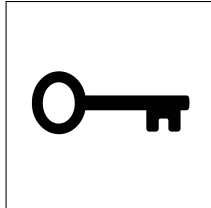
$$\begin{aligned}P(X = k) &= \binom{n}{k} (p)^k (1 - p)^{n-k} \\ P(X = 1) &= \binom{2}{1} (0.50)^1 (0.50)^1 \\ P(X = 1) &= 2 \times 0.50 \times 0.50 \\ P(X = 1) &= \boxed{0.50}\end{aligned}$$



$$\begin{aligned}n &= 5 \\ p &= 0.25 \\ P(X \geq 3) &= ?\end{aligned}$$



Bernoulli Trials



$$\begin{aligned}n &= 5 \\p &= 0.25 \\P(X \geq 3) &= ?\end{aligned}$$

$$P(X \geq 3) = \sum_{k=3}^5 \binom{5}{k} (0.25)^k (0.75)^{5-k}$$

$$P(X = 3) = \binom{5}{3} (0.25)^3 (0.75)^2 = 10 \cdot 0.015625 \cdot 0.5625 \approx 0.08789$$

$$P(X = 4) = \binom{5}{4} (0.25)^4 (0.75)^1 = 5 \cdot 0.00390625 \cdot 0.75 \approx 0.01465$$

$$P(X = 5) = \binom{5}{5} (0.25)^5 (0.75)^0 = 1 \cdot 0.0009765625 = 0.00098$$

$$P(X \geq 3) \approx 0.08789 + 0.01465 + 0.00098 = \boxed{0.10352}$$