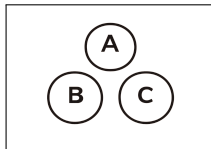


14

Discrete Distribution PMF

F



$$P_0 = P_1 = P_2 = 1/4$$

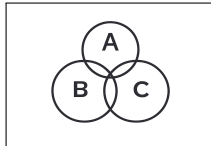
$$X : \Omega \rightarrow \mathbb{R}$$

$$X(1, 1) = 1 + 1 = 2 = \Omega_2$$

$$X(1, 0) = 1 + 0 = 1 = \Omega_1$$

$$X(0, 1) = 0 + 1 = 1 = \Omega_1$$

$$X(0, 0) = 0 + 0 = 0 = \Omega_0$$



PMF

$$P(X = 0) = |\Omega_0| \times P_0 = 1 \times 1/4 = 1/4$$

$$P(X = 1) = |\Omega_1| \times P_1 = 2 \times 1/4 = 1/2$$

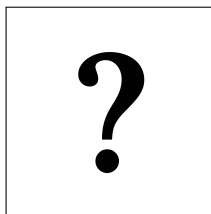
$$P(X = 2) = |\Omega_2| \times P_2 = 1 \times 1/4 = 1/4$$

CDF

$$F(X = 0) = P(X = 0) = 1/4$$

$$F(X = 1) = P(X = 0) + P(X = 1) = 3/4$$

$$F(X = 2) = P(X = 0) + P(X = 1) + P(X = 2) = 1$$



$$S = \{B, B, B, B, B, B, B, B, R, R, R, R, R, R, R, R, R, R, B, B, B, B, B, B, B, B, B, B\}$$

$$|T| = 4$$

$$P(X = x) = ?$$

$$P(X = 0) = ?$$

$$P(X = 1) = ?$$

14

Discrete Distribution
PMF

F



$S = \{B, B, B, B, B, B, B, B, R, R, R, R, R, R, R, R, R, R, B, B, B, B, B, B, B, B, B, B\}$
 $|T| = 4$

$$P(X = x) = \mathbb{P}(T, x) = \frac{\binom{8}{x} \times \binom{22}{4-x}}{\binom{30}{4}}, \quad x = 0, 1, 2, 3, 4$$

$$P(X = 0) = \mathbb{P}(T, 0) = \frac{\binom{22}{4}}{\binom{30}{4}}$$

$$P(X = 1) = \mathbb{P}(T, 1) = \frac{\binom{8}{1} \times \binom{22}{3}}{\binom{30}{4}}$$