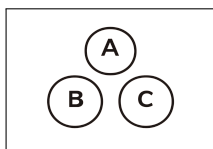


14

Discrete Distribution PMF

H



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

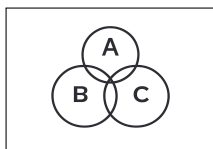
$$X : \Omega \rightarrow \mathbb{R}$$

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

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

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

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



PMF

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

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

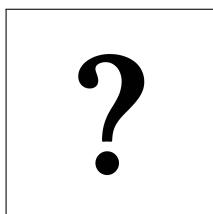
$$P(X = 2) = |\Omega_2| \times P_2 = 1 \times 1/4 = 1/4$$

CDF

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

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

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



$$P(X = x) = \frac{\binom{7}{x} \times \binom{3}{4-x}}{\binom{10}{4}}, \quad x = 0, 1, 2, 3, 4$$

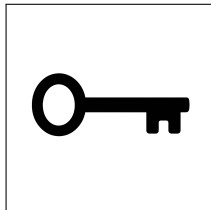
$$PMF = ?$$

$$CDF = ?$$

14

Discrete Distribution
PMF

H



$$P(X = x) = \frac{\binom{7}{x} \times \binom{3}{4-x}}{\binom{10}{4}}, \quad x = 0, 1, 2, 3, 4$$

$$P(X = 0) = 1/210$$

$$P(X = 1) = 1/10$$

$$P(X = 2) = 3/10$$

$$P(X = 3) = 1/6$$

$$P(X = 4) = 0$$

$$F(X = 0) = P(X = 0) = \frac{1}{210}$$

$$F(X = 1) = P(X = 0) + P(X = 1) = \frac{22}{210}$$

$$F(X = 2) = P(X = 0) + P(X = 1) + P(X = 2) = \frac{85}{210}$$

$$F(X = 3) = P(X = 0) + P(X = 1) + P(X = 2) + P(X = 3) = \frac{120}{210} = \frac{4}{7}$$

$$F(X = 4) = P(X = 0) + P(X = 1) + P(X = 2) + P(X = 3) + P(X = 4) = 1$$