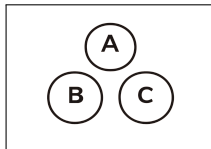


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Discrete Distribution PMF

K



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

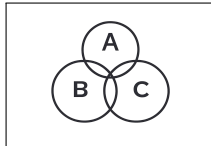
$$X : \Omega \rightarrow \mathbb{R}$$

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

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

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

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



PMF

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

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

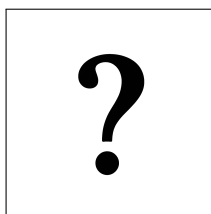
$$P(X = 2) = |\Omega_2| \times P_2 = 1 \times 1/4 = 1/4$$

CDF

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

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

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



$$p(x) = kx, \quad \text{for } x = 1, 2, 3, 4, 5, 6$$

$$\sum_{x=1}^6 kx = 1$$

$$k = ?$$

$$PMF = ?$$

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Discrete Distribution
PMF

K



$$p(x) = kx, \quad \text{for } x = 1, 2, 3, 4, 5, 6$$

$$\sum_{x=1}^6 kx = 1$$

$$k(1 + 2 + 3 + 4 + 5 + 6) = 1$$

$$k \times 21 = 1$$

$$k = \frac{1}{21}$$

$$P(X = 1) = \frac{1}{21} \times 1 = \frac{1}{21}$$

$$P(X = 2) = \frac{1}{21} \times 2 = \frac{2}{21}$$

$$P(X = 3) = \frac{1}{21} \times 3 = \frac{3}{21} = \frac{1}{7}$$

$$P(X = 4) = \frac{1}{21} \times 4 = \frac{4}{21}$$

$$P(X = 5) = \frac{1}{21} \times 5 = \frac{5}{21}$$

$$P(X = 6) = \frac{1}{21} \times 6 = \frac{6}{21} = \frac{2}{7}$$