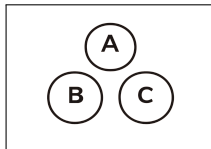


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Discrete Distribution PMF

E



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

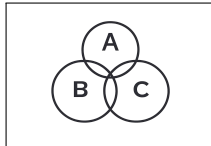
$$X : \Omega \rightarrow \mathbb{R}$$

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

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

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

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



PMF

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

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

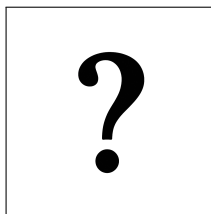
$$P(X = 2) = |\Omega_2| \times P_2 = 1 \times 1/4 = 1/4$$

CDF

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

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

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



CDF

$$F(X = 0) = P(X = 0) = 0.3$$

$$F(X = 1) = P(X = 0) + P(X = 1) = 0.7$$

$$F(X = 2) = P(X = 0) + P(X = 1) + P(X = 2) = 0.9$$

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

$$PMF = ?$$

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Discrete Distribution PMF

E



PMF

$$P(X = 0) = F(X = 0) - F(X = -1) = 0.3 - 0 = 0.3$$

$$P(X = 1) = F(X = 1) - F(X = 0) = 0.7 - 0.3 = 0.4$$

$$P(X = 2) = F(X = 2) - F(X = 1) = 0.9 - 0.7 = 0.2$$

$$P(X = 3) = F(X = 3) - F(X = 2) = 1.0 - 0.9 = 0.1$$