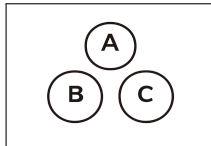


25

Discrete Distribution CDF

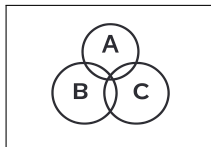
C



$$N = 5$$

$$K = 3$$

$$n = 2$$



$$P(X = k) = \binom{3}{k} \binom{2}{2-k} / \binom{5}{2} = \binom{3}{k} \binom{2}{2-k} / 10$$

$$P(X = 0) = \binom{3}{0} \binom{2}{2} / 10 = 1/10 = 0.10$$

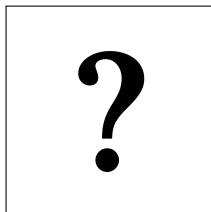
$$P(X = 1) = \binom{3}{1} \binom{2}{1} / 10 = 6/10 = 0.60$$

$$P(X = 2) = \binom{3}{2} \binom{2}{0} / 10 = 3/10 = 0.30$$

$$F(0) = 0.10$$

$$F(1) = 0.10 + 0.60 = 0.70$$

$$F(2) = 1$$



CDF

$$F(x < -2) = 0$$

$$F(-2 \leq x < 1.1) = 0.1$$

$$F(1.1 \leq x < 2) = 0.3$$

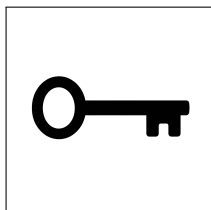
$$F(2 \leq x < 3) = 0.6$$

$$F(x \geq 3) = 1$$

$$PMF = ?$$

25 Discrete Distribution CDF

C



CDF

$$F(x < -2) = 0$$

$$F(-2 \leq x < 1.1) = 0.1$$

$$F(1.1 \leq x < 2) = 0.3$$

$$F(2 \leq x < 3) = 0.6$$

$$F(x \geq 3) = 1$$

$$PMF = ?$$

PMF

$$P(x = -2) = F(-2) - F(x < -2) = 0.1$$

$$P(x = 1.1) = F(x = -1.1) - F(-2) = 0.2$$

$$P(x = 0.2) = F(2) - F(1.1) = 0.3$$

$$P(x = 3) = F(3) - F(2) = 0.4$$