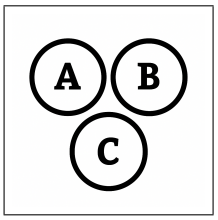
PMF and CDF



$P_0 = P_1 = P_2 = 1/4$

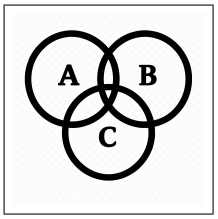
$X : \Omega \to \mathbb{R}$

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

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

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

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



PMF

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

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

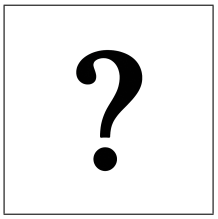
$P(X = 2) = |\Omega_2| \times P_2 = 1 \times 1/4 = 1/4$

CDF

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

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

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



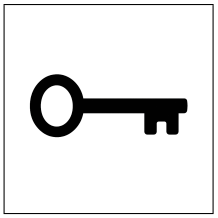
$N \in \{1,2,3,4,5\}$

$p(n) = K \times n$

$K = ?$

$PMF = ?$

PMF and CDF



$N \in \{1, 2, 3, 4, 5\}$
$p(n) = K \times n$
$K = ?$
$PMF = ?$
$\sum_{n=1}^{5} K \times n = 1$
$K(1 + 2 + 3 + 4 + 5) = 1$
$K \times 15 = 1$
$K = \frac{1}{15}$

$p(n) = \frac{n}{15}, \quad n = 1, 2, 3, 4, 5$
$P(X = 1) = 1/15$
$P(X = 2) = 2/15$
$P(X = 3) = 3/15$
$P(X = 4) = 4/15$
$P(X = 5) = 5/15$