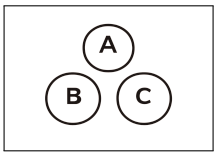
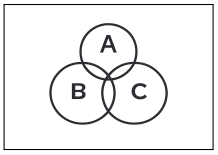
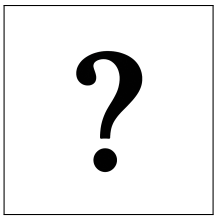
13 Discrete Distribution Random Variable G



$X(HHH) = 3$
$X(HHT) = 2$
$X(HTH) = 2$
$X(THH) = 2$
$X(HTT) = 1$
$X(THT) = 1$
$X(TTH) = 1$
$X(TTT) = 0$

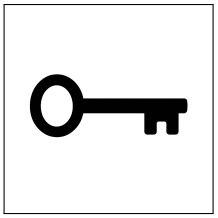


$X : \Omega \to 0, 1, 2, 3$
$P(X = 0) = \frac{1}{8}$
$P(X = 1) = \frac{3}{8}$
$P(X = 2) = \frac{3}{8}$
$P(X = 3) = \frac{1}{8}$



$P_1 = 0.7$
$P_2 = 0.5$
$P_3 = 0.4$
$X : \Omega \to \mathbb{R}$
$\Omega = \{\mathsf{H}, \mathsf{M}\}^3$
$X(M,M,M) = 0$
$X(H,M,M) = 1$
$X(M,H,M) = 1$
$X(M,M,H) = 1$
$X(H,H,M) = 2$
$X(H,M,H) = 2$
$X(M,H,H) = 2$
$X(H,H,H) = 3$
$P(X = 0) = P(M,M,M) = ?$

13 Discrete Distribution Random Variable G



$P_1 = 0.7$
$P_2 = 0.5$
$P_3 = 0.4$
$X : \Omega \to \mathbb{R}$
$\Omega = \{\mathsf{H}, \mathsf{M}\}^3$
$X(M,M,M) = 0$
$X(H,M,M) = 1$
$X(M,H,M) = 1$
$X(M,M,H) = 1$
$X(H,H,M) = 2$
$X(H,M,H) = 2$
$X(M,H,H) = 2$
$X(H,H,H) = 3$
$P(X = 0) = P(M,M,M) = ?$

$P(M,M,M) = (1-0.7)(1-0.5)(1-0.4) = 0.3 \times 0.5 \times 0.6 = 0.09$