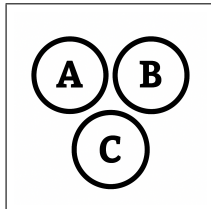
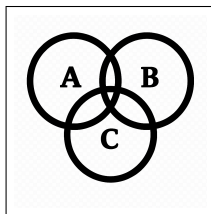


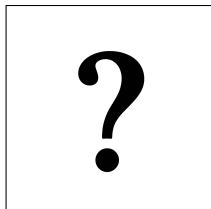
H Discrete Random Variables H



$$\begin{aligned}
 X(HHH) &= 3 \\
 X(HHT) &= 2 \\
 X(HTH) &= 2 \\
 X(THH) &= 2 \\
 X(HTT) &= 1 \\
 X(THT) &= 1 \\
 X(TTH) &= 1 \\
 X(TTT) &= 0
 \end{aligned}$$

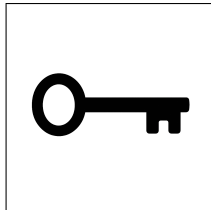


$$\begin{aligned}
 X : \Omega &\rightarrow 0, 1, 2, 3 \\
 P(X = 0) &= \frac{1}{8} \\
 P(X = 1) &= \frac{3}{8} \\
 P(X = 2) &= \frac{3}{8} \\
 P(X = 3) &= \frac{1}{8}
 \end{aligned}$$



$$\begin{aligned}
 S &= (i, j) \mid i \in 1, 2, 3, 4, 5, 6, ; j \in 1, 2, 3, 4, 5, 6 \rightarrow |S| = 36 \\
 x &= 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 \\
 P(X = x) &= ?
 \end{aligned}$$

H Discrete Random Variables H



$S = (i, j) \mid i \in 1, 2, 3, 4, 5, 6, ; j \in 1, 2, 3, 4, 5, 6 \rightarrow |S| = 36$

$x = 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12$

$P(X = x) = ?$

$$2 = (1, 1) = \frac{1}{36}$$

$$3 = (1, 2), (2, 1) = \frac{2}{36}$$

$$4 = (1, 3), (2, 2), (3, 1) = \frac{3}{36}$$

$$5 = (1, 4), (2, 3), (3, 2), (4, 1) = \frac{4}{36}$$

$$6 = (1, 5), (2, 4), (3, 3), (4, 2), (5, 1) = \frac{5}{36}$$

$$7 = (1, 6), (2, 5), (3, 4), (4, 3), (5, 2), (6, 1) = \frac{6}{36}$$

$$8 = (2, 6), (3, 5), (4, 4), (5, 3), (6, 2) = \frac{5}{36}$$

$$9 = (3, 6), (4, 5), (5, 4), (6, 3) = \frac{4}{36}$$

$$10 = (4, 6), (5, 5), (6, 4) = \frac{3}{36}$$

$$11 = (5, 6), (6, 5) = \frac{2}{36}$$

$$12 = (6, 6) = \frac{1}{36}$$

$P(X = x) =$

$$\frac{1}{36}, x = 2, 12$$

$$\frac{2}{36}, x = 3, 11$$

$$\frac{3}{36}, x = 4, 10$$

$$\frac{4}{36}, x = 5, 9$$

$$\frac{5}{36}, x = 6, 8$$

$$\frac{6}{36}, x = 7$$