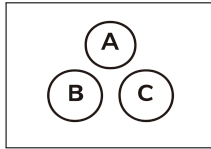


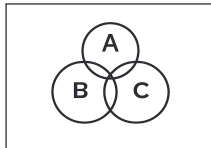
8

Discrete Distribution
Probability

P



$$S = \{B, B, R, R, R\}$$



$$\mathbb{P}(S, BB) = \mathbb{P}(S, B) \times \mathbb{P}(S, B) = 0.40 \times 0.25 = 0.10$$

$$\mathbb{P}(S, BR) = \mathbb{P}(S, B) \times \mathbb{P}(S, R) = 0.40 \times 0.75 = 0.30$$

$$\mathbb{P}(S, RB) = \mathbb{P}(S, R) \times \mathbb{P}(S, B) = 0.60 \times 0.50 = 0.30$$

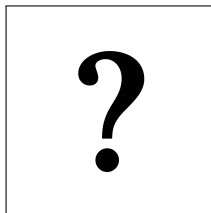
$$\mathbb{P}(S, RR) = \mathbb{P}(S, R) \times \mathbb{P}(S, R) = 0.60 \times 0.50 = 0.30$$

$$\mathbb{P}(S, BB) = \mathbb{P}(S, B) \times \mathbb{P}(S, B) = 0.40 \times 0.40 = 0.16$$

$$\mathbb{P}(S, BR) = \mathbb{P}(S, B) \times \mathbb{P}(S, R) = 0.40 \times 0.60 = 0.24$$

$$\mathbb{P}(S, RB) = \mathbb{P}(S, R) \times \mathbb{P}(S, B) = 0.60 \times 0.40 = 0.24$$

$$\mathbb{P}(S, RR) = \mathbb{P}(S, R) \times \mathbb{P}(S, R) = 0.60 \times 0.60 = 0.36$$



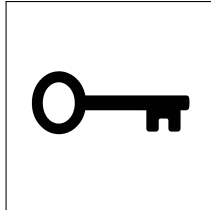
$$S = \{A, A, A, A, A, A, H, H, H, H, L, L\}$$

$$P(\mathbb{P}(S, AA)) + P(\mathbb{P}(S, HH)) + P(\mathbb{P}(S, LL)) = ?$$

8

Discrete Distribution
Probability

P



$$S = \{A, A, A, A, A, A, H, H, H, H, L, L\}$$

$$\mathfrak{C}(S, 6) = \binom{12}{6} = 924$$

$$\mathfrak{C}(S, AA) = \binom{6}{2} = 15$$

$$\mathfrak{C}(S, HH) = \binom{4}{2} = 6$$

$$\mathfrak{C}(S, LL) = \binom{2}{2} = 1$$

$$P(\mathfrak{C}(S, AA)) + P(\mathfrak{C}(S, HH)) + P(\mathfrak{C}(S, LL)) =$$

$$(\mathfrak{C}(S, AA) + \mathfrak{C}(S, HH) + \mathfrak{C}(S, LL)) / \mathfrak{C}(S, 6) = (15 \times 6 \times 1) / 924 = 15 / 154 \approx 0.10$$