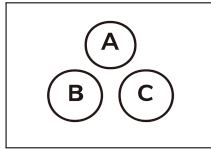


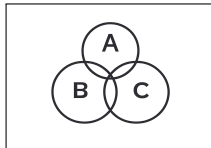
8

Discrete Distribution Probability

L



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



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

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

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

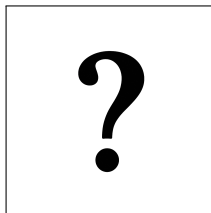
$$\mathbb{P}(S, RR) = \mathbb{P}(S, R) \times \mathbb{P}(S, R) = 0.60 \times 0.50 = 0.30$$

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

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

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

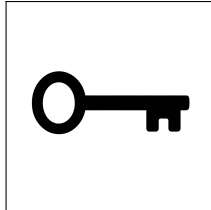
$$\mathbb{P}(S, RR) = \mathbb{P}(S, R) \times \mathbb{P}(S, R) = 0.60 \times 0.60 = 0.36$$



$$S = \{C, C, C, C, C, C, C, C, C, C, C, C, S, S, S, S, S, V, V, V\}$$

$$P(\mathbb{P}(S, CC)) + P(\mathbb{P}(S, SS)) + P(\mathbb{P}(S, VV)) = ?$$

8

Discrete Distribution
Probability

$$S = \{C, C, C, C, C, C, C, C, C, C, C, C, S, S, S, S, S, V, V, V\}$$

$$\mathfrak{C}(S, 2) = \binom{20}{2} = \frac{20 \cdot 19}{2} = 190$$

$$\mathfrak{C}(S, CC) = \binom{12}{2} = \frac{12 \cdot 11}{2} = 66$$

$$\mathfrak{C}(S, SS) = \binom{5}{2} = \frac{5 \cdot 4}{2} = 10$$

$$\mathfrak{C}(S, VV) = \binom{3}{2} = \frac{3 \cdot 2}{2} = 3$$

$$P(\mathfrak{C}(S, CC)) + P(\mathfrak{C}(S, SS)) + P(\mathfrak{C}(S, VV)) =$$

$$(\mathfrak{C}(S, CC) + \mathfrak{C}(S, SS) + \mathfrak{C}(S, VV)) / \mathfrak{C}(S, 2) = (66 + 10 + 3) / 190 = 79 / 190 \approx 0.42$$