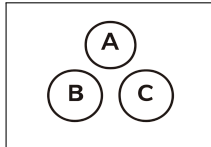


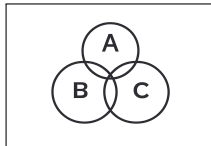
8

Discrete Distribution
Probability

D



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



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

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

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

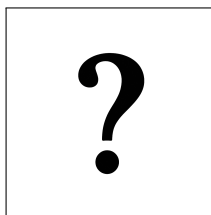
$$\mathbb{P}(S, RR) = \mathbb{P}(S, R) \times \mathbb{P}(S, R) = 0.60 \times 0.50 = 0.30$$

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

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

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

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



$$S = \{R, G, Y, W\}$$

$$P(RW) = ?$$

8

Discrete Distribution
Probability

D



$$S = \{R, G, Y, W\}$$

$$\mathbb{P}(S, 2) = \binom{4}{2} = \frac{4!}{2!(4-2)!} = \frac{4 \times 3 \times 2 \times 1}{2 \times (2 \times 1)} = \frac{24}{4} = 6$$

$$\mathbb{P}(S, RW) = \binom{2}{2} = \frac{2!}{2!(2-2)!} = \frac{2}{2 \times 1} = \frac{2}{2} = 1$$

$$P(\mathbb{P}(S, RW)) = \frac{\mathbb{P}(S, RW)}{\mathbb{P}(S, 2)} = \frac{1}{6}$$