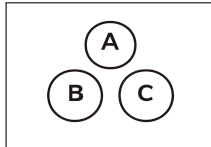


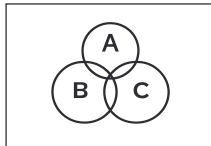
8

Discrete Distribution
Probability

M



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



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

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

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

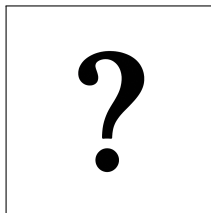
$$\mathbb{P}(S, RR) = \mathbb{P}(S, R) \times \mathbb{P}(S, R) = 0.60 \times 0.50 = 0.30$$

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

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

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

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



$$S = R, R, R, R, R, B, B, B, G, G$$

$$P(\mathbb{P}(S, RR) + \mathbb{P}(S, BB) + \mathbb{P}(S, GG)) = ?$$

8

Discrete Distribution
Probability

M



$S = R, R, R, R, R, B, B, B, G, G$

$$\mathbb{C}(S, 2) = \binom{10}{2} = 45$$

$$\mathbb{C}(S, RR) = \binom{5}{2} = 10$$

$$\mathbb{C}(S, BB) = \binom{3}{2} = 3$$

$$\mathbb{C}(S, GG) = \binom{2}{2} = 1$$

$$P(\mathbb{C}(S, RR) + \mathbb{C}(S, BB) + \mathbb{C}(S, GG)) = (\mathbb{C}(S, RR) +$$

$$\mathbb{C}(S, BB) + \mathbb{C}(S, GG)) / \mathbb{C}(S, 2) = (10 + 3 + 1) / 45 = 14/45 \approx 0.31$$