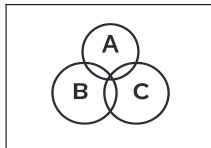
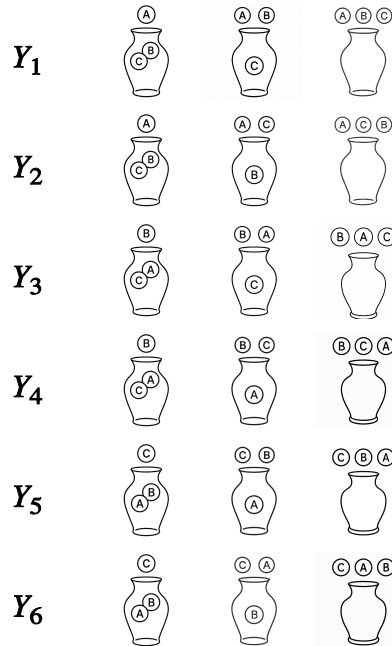
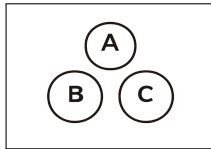


4

Discrete Distribution Permutations

D



$$N = \{A, B, C\}$$

$$|Y| = \sum_{k=0}^r rP_k = \frac{r!}{(r-k)!}$$

$$|Y| = |N| \times (|N|-1) \times (|N|-2)$$

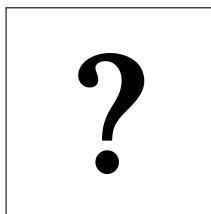
$$|Y| = 3 \times 2 \times 1 = 6$$

$$M = \{T, H\}$$

$$|X| = \sum_{k=0}^r |M|^k$$

$$|X| = |M| \times |M| \times |M|$$

$$|X| = 2 \times 2 \times 2 = 8$$



$$N = \{1, 2, 3, 4, 5, 6, 7\} : M = \{1, 2, 3, 4, 5\}$$

$$X = \sum_{k=0}^r (N, 7)$$

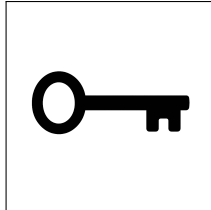
$$Y = \sum_{k=0}^r (M, 5)$$

$$|Z| = |X| \times |Y| = ?$$

4

Discrete Distribution Permutations

D



$$N = \{1, 2, 3, 4, 5, 6, 7\}$$

$$X = \textcircled{\equiv}(S, 7)$$

$$M = \{1, 2, 3, 4, 5\}$$

$$Y = \textcircled{\equiv}(S, 5)$$

$$|Z| = |X| \times |Y| = 5! \times 7! = (7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1) \times (5 \times 4 \times 3 \times 2 \times 1) = 5,040 \times 120 = 604,800$$