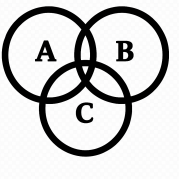
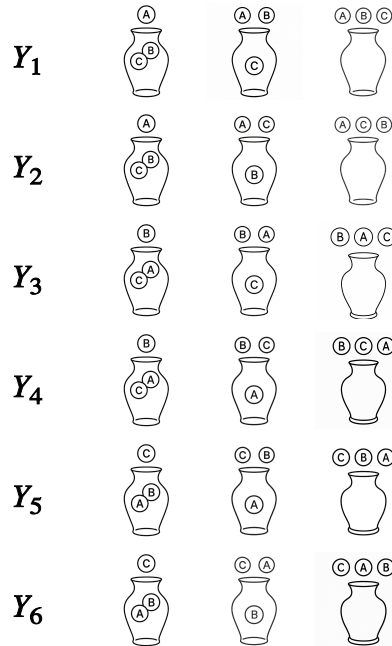
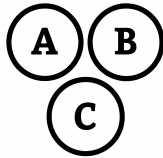


# Permutations



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

$$|Y| = \sum_{k=1}^3 rP_k = \frac{r!}{(r-k)!}$$

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

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

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

$$|X| = \sum_{k=1}^2 |M|^k$$

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

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

?

$$A = \{1, 2, 3\} : B = \{1, 2\}' : C = \{1, 2, 3, 4, 5, 6\}$$

$$X = \sum_{k=1}^1 (A, 1) : Y = \sum_{k=1}^1 (B, 1) : Z = \sum_{k=1}^1 (C, 1) :$$

$$|X| = |A| : |Y| = |B| : |Z| = |C|$$

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

# Permutations



$$A = \{1, 2, 3\} : B = \{1, 2\} : C = \{1, 2, 3, 4, 5, 6\}$$

$$X = \textcircled{A,1}$$

$$Y = \textcircled{B,1}$$

$$Z = \textcircled{C,1}$$

$$|X| = |A|$$

$$|Y| = |B|$$

$$|Z| = |C|$$

$$|S| = |X| \times |Y| \times |Z| = |A| \times |B| \times |C|$$

$$|S| = 3 \times 2 \times 6 = 36$$