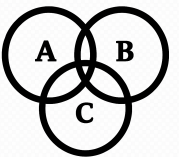
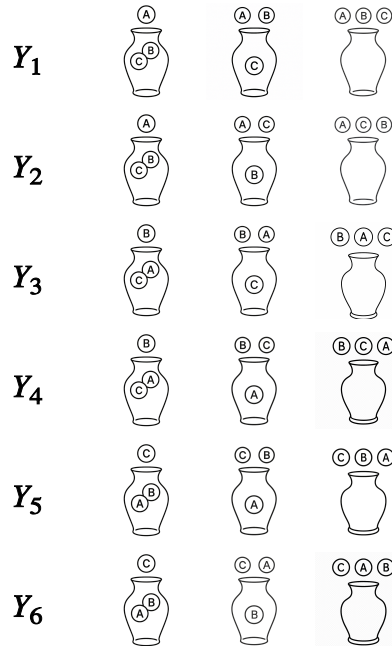
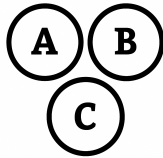


# Q

## Counting

# Q



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

$$Y = \text{⊞}(N, 3)$$

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

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

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

$$X = \text{⊞}(M, 3)$$

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

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



$$S = \{0, 1\}$$

$$|\text{⊞}(S, 50)| = ?$$

# Q

## Counting

# Q



$S = \{0, 1\}$

$$|\mathbb{B}(S, 50)| = |S|^{50} \approx 1.13 \times 10^{15}$$