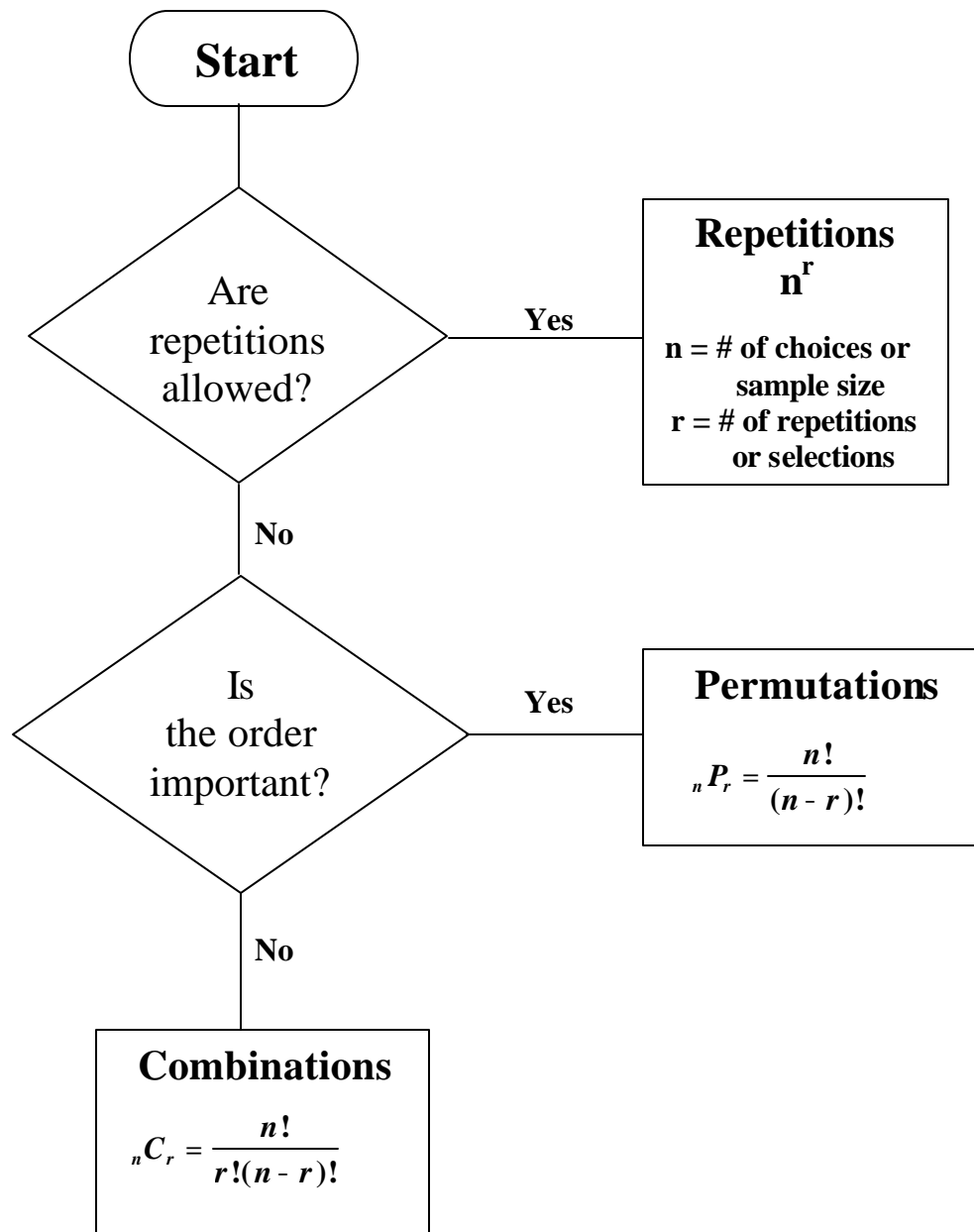


# COUNTING TECHNIQUES



**Factorial:**  $n! = n(n-1)(n-2)(n-3)\dots(2)(1)$

$$6! = 6 \times 5 \times 4 \times 3 \times 2 \times 1 = 720$$

$$5! = 5 \times 4 \times 3 \times 2 \times 1 = 120$$

$$4! = 4 \times 3 \times 2 \times 1 = 24$$

$$3! = 3 \times 2 \times 1 = 6$$

$$2! = 2 \times 1 = 2$$

$$1! = 1$$

$$0! = 1 \text{ (by definition)}$$