Choosing r objects from n objects,

or, Putting r objects into n boxes

	Repetition	No repetition
Ordered/ Distinguishable	Sequences (Arrangements)	Permutations
	n^r	$P(n,r) = \dfrac{n!}{(n-r)!}$
	Table-service order	Choosing seats
	Maxwell–Boltzmann particles	—
Unordered/ Indistinguishable	Combinations with repetition (Multisets)	Combinations (Subsets)
	$\dbinom{n-1+r}{r} = \dfrac{(n-1+r)!}{r!\,(n-1)!}$	$C(n,r) = \dbinom{n}{r} = \dfrac{n!}{r!\,(n-r)!}$
	Fast-food order	Setting the table
	Bose–Einstein particles	Fermi–Dirac particles

References:
1. M. Townsend, *Discrete Mathematics: Applied Combinatorics and Graph Theory*, Benjamin/Cummings, Menlo Park, 1987, Sec. 2.3.
2. Grimaldi, 4th ed., Secs. 1.4 and 1.7.