**无重复组合**

from itertools import combinations

combinations(list,k)

**有重复组合**

from itertools import combinations\_with\_replacement

combinations\_with\_replacement(list,k)

**排列**

from itertools import permutations

permutations(list,k)

**笛卡尔积**

from itertools import product

product(list1,list2)

#生成一个list，元素为list1和list2中元素两两匹配构成的元组

**Reduce函数**

from functools import reduce

reduce(func,iterable,\*initial)

# reduce(f, [x1, x2, x3, x4]) = f(f(f(x1, x2), x3), x4)，可用于实现如阶乘、梯度下降等迭代计算

#如果定义了intial值，则变为f(f(f(f(initial, x1), x2), x3),x4)