```
import datetime
import decimal, fractions
from collections import namedtuple, OrderedDict, defaultdict, Counter
from sys import stdin, stdout, stderr, maxint, exit
from math import gcd, ceil, floor, log, log10, sqrt, factorial, pi, sin, cos, tan, asin, acos, atan, atan2, copysign, isfinite, isnan
from bisect import bisect, bisect_left
from itertools import permutations, combinations, combinations_with_replacement, product, compress
from functools import reduce, lru_cache
import sys, os, io, re, bisect, heapq, math, fractions, itertools, collections, functools, decimal, random, time, datetime, pprint, traceback, enum, dataclass, typing, copy, hashlib, base64, binascii, struct, array, queue, deque, itertools, functools, collections, bisect, heapq, math, fractions
```