import math

'''

# ——————————————————————int列表A，str列表B，str字符串C的转换

A = [1, 2, 3, 4, 5]

B = [str(x) for x in A] # A-B

print(B)

A = [int(x) for x in B] # B-A

print(A)

C = "-".join(B) # B-C

print(C)

B = C.split("-") # C-B(split默认以任意个空格隔开)

print(B)

A = [int(i) for i in C.split("-")] # C-A

print(A)

# A = [1, 2, 3, 'a', 'b']

C = "-".join('%s' % i for i in A) # A-C(A含非数字也可以)

print(C)

# ——————————————————————列表和字符串

# 2维数组创建初始化

i, j = 2, 3

dp = [[0] \* j for \_ in range(i)] # [[0, 0, 0], [0, 0, 0]]2行3列

print(dp)

# 索引插入

str = "12345"

list = [1, 2, 3, 4, 5]

str = (str[0:2] + "x" + str[2:len(str)])

list.insert(2, "x")

print(str)

print(list)

# 尾部插入

str = "12345"

list = [1, 2, 3, 4, 5]

str += '6789'

list.append(6)

list.extend((7, 8))

list = list + [9, 10]

print(str)

print(list)

# 删除

str = "12345"

list = [1, 2, 3, 4, 5]

str = str.strip('1') # 移除字符串头尾字符（默认为空格或换行符）

list.remove(1) # 移除值

list.pop(1) # 移除索引,默认-1

print(str)

print(list)

# 查找,计数,翻转

str = "12345"

list = [1, 2, 3, 4, 5]

print(str.find('5'))

print(list.index(5))

print(str.count('5'))

print(list.count(5))

print(str[::-1])

print(list[::-1])

# 替换

str = "12345"

list = [1, 2, 3, 4, 5]

replace = {'1': '11', '2': '22'}

print([replace[i] if i in replace else i for i in str]) # 变成列表

replace = {1: 11, 2: 22}

print([replace[i] if i in replace else i for i in list])

# ——————————————————————集合和字典

# set集合增删

set1 = {1, 2, 3}

set1.add(3) # 增，有不报错

set1.discard(4) # 删，无不报错

print(set1)

# dict字典增删查

dict = {'A': 1, 'B': 2, 'C': 3}

dict.update({'A': 0, 'D': 4}) # 增，有不报错,覆盖

print(dict.pop('F', -1)) # 删，无不报错，返回-1

print(dict.setdefault('E', 5)) # 键查值，无不报错,增加后返回

print(dict.get('G', -1)) # 键查值，无不报错,返回-1

print(dict)

# dict字典遍历键值

dict = {'A': 1, 'B': 2, 'C': 3}

for i in dict: # 遍历键

print(i)

for i in dict.values(): # 遍历值

print(i)

for i in dict.items(): # 遍历键值元组

print(i)

for key, value in dict.items(): # 遍历键值

print(key, value)

# ——————————————————————基本

# range边界,切片边界

for i in range(2, 5, 1): # 234

print(i, end='')

if i == 4: print()

for i in range(5, 2, -1): # 543

print(i, end='')

if i == 3: print()

nums = [0, 1, 2, 3, 4, 5]

print(nums[2:4])

print(nums[-2:])

print(nums[:-2])

# 除和整除

print(5 / 2, -5 / 2, 5 / -2, -5 / -2) # 2 -3 -3 2

print(5 // 2, -5 // 2, 5 // -2, -5 // -2) # 2.5 -2.5 -2.5 2.5

# 最小值列表初始化

nums = [float('-inf')] \* 3 # [-inf, -inf, -inf]

print(nums)

# ——————————————————————语法糖

# 打包解包

x = [1, 2, 3]

a, b, c = x # 需要和容器元素个数相同

print(a, b)

# 列表推导式

a = [1, 2, 3]

b = [10 + x for x in a] # [11, 12, 13]

c = [10 + x for x in a if x % 2 != 0] # [11, 13]

print(b, c)

a2 = [[1, 2, 3], [4, 5, 6]]

b2 = [100 + x for y in a2 for x in y if x % 2 != 0] # [111, 113, 111, 113]

print(b2)

# 数字分隔符

a = [1\_000\_000, 2\_000]

print(a)

# 自动处理文件流

with open('test.txt', 'r')as f:

data = f.read()

print(data)

# float数字比较

a = 0.1

b = 0.2

print(a + b == 0.3)

print(math.isclose(a + b, 0.3))

# format字符串格式化，保留小数点后2位

print("{0}+{1}={2}?".format(1, 2, 3)) # 1+2=3?

print("{:.2f}".format(2 / 3)) # 0.67

print("{:.2%}".format(2 / 3)) # 66.67%

print("{:.2e}".format(2 / 3)) # 6.67e-01

print(" ", end="") # 输出末尾字符end默认为回车换行符，修改为空

'''