**1 Задание**

Код:

def NOD(a, b):  
 while a != 0 and b != 0:  
 if a > b:   
 a = a-b  
 else:   
 b = b-a  
 return max(a, b)  
  
def main():  
 print(NOD(30, 24))  
  
main()

Вывод:

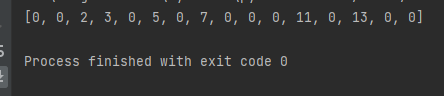


**2 Задание**

Код:

def simple(n):  
 sieve = list(range(n + 1))  
 sieve[1] = 0  
 for i in sieve:  
 if i > 1:  
 for j in range(2\*i, len(sieve), i):  
 sieve[j] = 0  
 return sieve  
  
def main():  
 print(simple(15))  
  
main()

Вывод:



**3 Задание**

Код:

from random import randint  
  
def puzsort(arr):  
 for i in range(len(arr)-1):  
 for j in range(len(arr)-i-1):  
 if arr[j] > arr[j+1]:  
 buff = arr[j]  
 arr[j] = arr[j+1]  
 arr[j+1] = buff  
  
def main():  
 arr = []  
 for i in range(15):  
 arr.append(randint(1, 99))  
 print(arr)  
 puzsort(arr)  
 print(arr)  
  
main()

Вывод:



**4 Задание**

Код:

main.py:

import test  
from lib import lib  
  
if \_\_name\_\_ == "\_\_main\_\_":  
 res = lib([[1, 2, 3], [3, 4, 5], [5, 6, 7], [7, 8, 9], [1, 2, 3]])  
 print(res)  
 print(test.test())

lib.py

def lib(data):  
 res = set()  
 for i in data:  
 for j in data:  
 if i is not j:  
 res |= set(i) & set(j)  
 return res

test.py

import lib  
  
  
def test():  
 data = [[1, 2, 3], [3, 4, 5], [5, 6, 7], [7, 8, 9], [1, 2, 3]]  
 res = lib.lib(data)  
 check = False  
 expected = {1, 2, 3, 5, 7}  
 if expected == res:  
 check = True  
 return check

Вывод:

