Практическая работа 5

Задача 1

In [1]:
```
N = int(input())
i = 1
while i**2<=N:
    print(i**2)
    i=i+1
```

```
50
1
4
9
16
25
36
49
```

Задача 2

In [5]:
```
N = int(input())
i = 2
while N % i != 0:
    i = i+ 1
print(i)
```

```
3
3
```

Задача 3

In [7]:
```
N = int(input())
i = 1
while N>i:
    print(i)
    i*=2
```

```
50
1
2
4
8
16
32
```

Задача 4

In [34]:
```
N = int(input())
i = 1
while i<=N:
    if i==N:
        print("YES")
        break
    i*=2
else:
        print("NO")
```

```
8
YES
```

Задача 5

In [45]:
```
N = int(input())
k = 0
p = 1
while p < N:
    p = p * 2
    k += 1
print(k)
```

```
2
1
```

Задача 6

In [51]:
```
x, y = int(input()),int(input())
p=1
while x<=y:
    x=x+x*0.1
    p=p+1
print(p)
```

```
10
30
13
```

Задача 7

In [71]:
```
N = 0
E = 2
while E != 0:
    E = int(input())
    if E > N:
        N = E
print(N)
```

```
2
4
0
4
```

Задача 8

In [66]:
```
n = int(input())
i = 1
k = 0
while i <= n:
    k += i**2
    i += 1
print(k)
```

```
2
5
```

Задача 9

In [70]:
```
N = 1
kol = 0
while N != 0:
    N = int(input())
    kol+=1
print(kol-1)
```

```
12
2
3
4
0
4
```

Задача 10

In [76]:
```
N = 1
sum = 0
while N != 0:
    N = int(input())
    sum += N
print(sum)
```

```
1
2
3
0
6
```

Задача 11

In [86]:
```
sum = 0
kol = 0
E = int(input())
while E != 0:
    sum += E
    kol += 1
    E = int(input())
print(sum / kol)
```

```
1
7
9
0
5.666666666666667
```

Задача 12

In [88]:
```
kol = 0
E = int(input())
while E != 0:
    if E%2==0:
        kol += 1
    E = int(input())
print(kol)
```

```
2
1
4
0
2
```

Задача 13

In [95]:
```
kol = 0
E = int(input())
while E != 0:
        k = E
        E = int(input())
        if E>k:
            kol+=1
print(kol)
```

```
1
2
3
4
5
0
4
```

Задача 14

In [102]:
```
N,p = int(input()),int(input())
if N < p:
    N, p = p, N
E = int(input())
while E != 0:
    if E > N:
        p, N = N, E
    elif E > p:
        p = E
    E = int(input())
print(p)
```

```
1
2
3
4
5
0
4
```

Задача 15

In [113]:
```
max = 0
kol = 0
E = -1
while E != 0:
    E = int(input())
    if E > max:
        max, kol = E, 1
    elif E == max:
        kol += 1
print(kol)
```

```
1
3
1
3
0
2
```

Задача 16

In [119]:
```
n = int(input())
if n == 0:
    print(0)
else:
    x, y = 0, 1
    for i in range(2, n + 1):
        x, y = y, x + y
    print(y)
```

```
6
8
```

Задача 17

In [121]:
```
A = int(input())
if A == 0:
    print(0)
else:
    x, y = 0, 1
    n = 1
    while y<= A:
        if y == A:
            print(n)
            break
        x, y = y, x + y
        n += 1
    else:
        print(-1)
```

```
10
-1
```

Задача 18

In [1]:
```
n = int(input())
i = int(input())
while n!=i:
    if n%2==0 and n//2>=i :
        n = n//2
        print(':2')
    else:
        n=n-1
        print('-1')
```

```
179
20
-1
:2
-1
:2
:2
-1
-1
```

Задача 19

In [9]:
```
n = input()
p = n[::-1]
print(p)
```

```
2345
5432
```

Задача 20

In [13]:
```
K = int(input())
p = 0
r = 0
for p in range(1, K+1):
    Number = p
    D = 0
    while Number > 0:
        D = D * 10 + Number % 10
        Number = Number // 10
    if p == D:
        r += 1
print(r)
```

```
10
9
```

Задача 21

In [8]:
```
p=int(input())
c=1
b=0
while p!=0:
    v=int(input())
    p,v=v,p
    if v==p:
        c+=1
    if c>b:
        b=c
    if p!=v:
        c=1
print(b)
```

```
1
7
7
9
1
0
2
```

Задача 22

In [21]:
```
x1,x2=int(input()), int(input())
max, n = 1, 1
while 0==0:
    if x2==0 or x1==0:
        break
    while x1>x2:
        if x2==0:
            break
        n+=1
        if n>max:
            max=n
            x1=x2
            x2=int(input())
        else:
            x1=x2
            x2=int(input())
    n=1
    while x1<x2:
        n+=1
        if n>max:
            max=n
            x1=x2
            x2=int(input())
        else:
            x1=x2
            x2=int(input())
    n=1
    while x1==x2:
        n=1
        x1=x2
        x2=int(input())
print(max)
```

```
1
7
7
9
1
0
2
```

Задача 23

In [20]:
```
x, R= 1, 1
i, D, E = 0, 0, 0
m = 0
g = 0
q = 1000000
while R != 0:
    i += 1
    E = D
    D = R
    R = int(input())
    if i > 2 and D > R and D > E and R != 0:
        g = m
        m =  i
        if (m > 0) and (g > 0) and (m - g < q):
            q = m - g
if q == 1000000:
    q = 0
print(q)
```

```
1
2
1
1
2
1
2
1
0
2
```

Задача 24

In [28]:
```
a,b,c = int(input()),int(input()),int(input())
p = (a+b+c)/2
S = (p*(p-a)*(p-b)*(p-c))**0.5
print(S)
```

```
5
12
13
30.0
```