

Bàsics
Els espais i la indentació formen part del codi
Cada bloc ve marcat per la indentació
Ens permet fer comentaris
"""
ens permet fer comentaris de més línies
"""

Variables
Les variables no s'han de declarar, i agafen el tipus que se'ls assigna.
Per llegir l'entrada: A = input()
Transformar l'entrada a enter A = int(input())
Els decimals s'escriuen amb un punt, com per exemple 2.3
Interpreta un enter com una paraula: string(A)

Paraules clau
print Imprimeix un valor <code>print(l)</code>
while Repetició <code>while (l > 10):</code>
for Per a cada <code>for i in range(10):</code>
if Si <code>if (i==1):</code>
else Sinó <code>else:</code>
def Per crear procediments <code>def Fibon(n):</code>
return Retorna el valor <code>return (l)</code>
range Rang de valors <code>range(5)</code>

Operadors aritmètics
+ Suma <code>2+3</code> retorna 5
- Resta <code>3-2</code> retorna 1
* Producte <code>2*3</code> retorna 6
/ Divisió <code>3/2</code> retorna 2.5
% Mòdul <code>6%4</code> retorna 2
** Exponencial <code>2**3</code> retorna 8
// Divisió entera <code>9//2</code> retorna 4

Operadors de comparació
< Menor <code>2<3</code>
<= Menor o igual <code>2<=3</code>
== Igual <code>a==2</code>
> Major <code>3>2</code>
>= Major o igual <code>2>=2</code>
!= Diferent <code>2!=3</code>
<> Diferent <code>2<>3</code>

Llistes
llista= Creació <code>crea: 2, 6, 1</code> <code>[2,6,1]</code>
llista[0] Accés <code>retorna 2</code>
len Mida <code>len(llista)</code> retorna 3
sort Ordena <code>llista.sort()</code>
append Afegir <code>llista.append(5)</code>
in Pertànyer <code>3 in llista</code>

Operadors Lògics
and i <code>(a>0) and (a<5)</code>
or o <code>(a<0) or (a>5)</code>
not no <code>not (a>3)</code>

Matemàtiques	
ceil Part entera superior <code>math.ceil(2.5)</code> retorna 3	
fabs Valor absolut <code>math.fabs(-2)</code> retorna 2	
floor Part entera inferior <code>math.floor(2.5)</code> retorna 2	
gcd Màxim Comú Divisor <code>math.gcd(-14,36)</code> retorna 2	
pi Valor de pi <code>3.141592...</code>	
e Valor de e <code>2.718281...</code>	
sin, cos, tan Funcions trigonomètriques <code>math.sin(2)</code>	
asin Arcsinus <code>math.asin(0.5)</code>	
sqrt Arrel quadrada <code>math.sqrt(50)</code>	
log Logarítmic (a falta de base neperià) <code>math.log(4)</code> , <code>math.log(-30,10)</code>	
degrees Passa a graus <code>math.degrees(math.pi)</code>	
radians Passa a radians <code>math.radians(120)</code>	
Necessites import math	

Exemples de codi Python

```

result = 0
for a in range (1,1000):
    if (a%3==0 or a%5==0):
        result=result+a;
print (result)

def sumdivisor(n):
    result=0
    for i in range(1,int(n**0.5)+1):
        if n%i==0:
            result=result+i+n//i
        if i*i==n:
            result=result-i
    return result

print sumdivisors(1000)
    
```

Problemes extrets de www.projecteuler.net:

Multiples of 3 or 5

Problem 1



If we list all the natural numbers below 10 that are multiples of 3 or 5, we get 3, 5, 6 and 9. The sum of these multiples is 23.
Find the sum of all the multiples of 3 or 5 below 1000.

Even Fibonacci Numbers

Problem 2



Each new term in the Fibonacci sequence is generated by adding the previous two terms. By starting with 1 and 2, the first 10 terms will be:

1, 2, 3, 5, 8, 13, 21, 34, 55, 89, . . .

By considering the terms in the Fibonacci sequence whose values do not exceed four million, find the sum of the even-valued terms.

Largest Prime Factor

Problem 3



The prime factors of 13195 are 5, 7, 13 and 29.

What is the largest prime factor of the number 600851475143?

Largest Palindrome Product

Problem 4



A palindromic number reads the same both ways. The largest palindrome made from the product of two 2-digit numbers is $9009 = 91 \times 99$.

Find the largest palindrome made from the product of two 3-digit numbers.

Smallest Multiple

Problem 5



2520 is the smallest number that can be divided by each of the numbers from 1 to 10 without any remainder.

What is the smallest positive number that is *evenly divisible* by all of the numbers from 1 to 20?

Special Pythagorean Triplet

Problem 9



A Pythagorean triplet is a set of three natural numbers, $a < b < c$, for which,

$$a^2 + b^2 = c^2.$$

For example, $3^2 + 4^2 = 9 + 16 = 25 = 5^2$.

There exists exactly one Pythagorean triplet for which $a + b + c = 1000$.
Find the product abc .