```python
import math
from pdb import pm
from sympy import li
from sympy.ntheory.factor_ import totient
from sympy import primefactors, factorint

class EulerPhiFunctions:
    def __init__(self, n = 1,a = 1):
        self.n = n
        self.a = a

    def isPrimeNumber(self,num):
        if(num < 2):
            return False
        squareRoot = int(math.sqrt(num))
        for i in range(2, squareRoot +1 ):
            if(num % i == 0):
                return False
        return True

    def listPrimeNumber(self):
        listn =""
        if(self.n >= 2):
            listn += "2" + " "
        for i in range(3, self.n+1):
            if(self.isPrimeNumber(i)):
                listn += str(i) + " "
            i+=2
        print(listn)

    def EulerPhi(self,n):
        return totient(n)

    def checkPrimeTGT(self):
        if(math.gcd(self.n,self.a)) == 1:
            print("nguyen to cung nhau")
        else:
            print("ko nguyen to cung nhau")

    def AmoduleN(self):
        return self.a**(self.EulerPhi(self.n)-1)

    def PTPrime(self,n):
        i = 2
        listN = []
```

```python
        while(n > 1):
            if(n % i == 0):
                n = int(n/i)
                listN.append(i)
            else:
                i+=1
        if(len(listN)== 0):
            listN.append(n)
        return listN

    def Print_PTPrime(self):
        lN = self.PTPrime(self.n)
        size = len(lN)
        sb = ""
        for i in range(0, size - 1):
            sb += str(lN[i]) + " * "
        sb += str(lN[size - 1])
        print("Result:",self.n,"=",sb)

    def Print_Prime_Euler(self):
        arr_prime = primefactors(self.n)
        print("φ(%s) = %s " % (self.n, self.n),end='')
        for i in range(0, len(arr_prime)):
            print("* (1 - 1/%s)" % (arr_prime[i]),end='')


n = int(input("Nhap so nguyen duong: "))
a = int(input("Nhap so nguyen to cung nhau: "))
Pm = EulerPhiFunctions(n,a)

Pm.listPrimeNumber()
print(Pm.EulerPhi(n))
# Pm.checkPrimeTGT()

print(Pm.AmoduleN())
Pm.Print_PTPrime()
Pm.Print_Prime_Euler()
```

```
Nhap so nguyen duong: 24
Nhap so nguyen to cung nhau: 5
2 3 5 7 11 13 17 19 23
8
78125
Result: 24 = 2 * 2 * 2 * 3
φ(24) = 24 * (1 - 1/2)* (1 - 1/3)
```