

#Swapping of two numbers

a = 10

b = 20

a = a + b

b = a - b

a = a - b

print(a, b)

20 10

#To check even or odd number

num = 10

if num % 2 == 0:

print('Even Number')

else:

print('Odd Number')

Even Number

#Factorial of a number

num = 0

fact = 1

if num == 0:

print(fact)

else:

for i in range(1, num+1):
 fact = fact * i

print(fact)

1

#To count the factors of a number

num = 6

count = 0

for val in range(1, num+1):

if num % val == 0:

count += 1

print(count)

4

#To check whether a number is prime or not

num = 8

count = 0

for val in range(1, num+1):

if num % val == 0:

count += 1

```
if count == 2:
    print('Prime Number')
else:
    print('Not a prime Number')
```

Not a prime Number

#Another way to check a number is prime or not

```
num = 19
if num > 1:
    for val in range(2, num//2+1):
        if num % val == 0:
            print('Not a prime number')
            break
    else:
        print('Prime Number')
else:
    print('Not a prime number')
```

Prime Number

#Another way to check a number is prime or not with less no of iterations

```
num = 7
if num > 1:
    for val in range(2, int(num**0.5)+1):
        if num % val == 0:
            print('Not a prime number')
            break
    else:
        print('Prime number')
else:
    print('Not a prime number')
```

Prime number

#Write a program to reverse a number

```
num = 9
rev = 0
while num != 0:
    rem = num % 10
    rev = rev*10 + rem
    num //= 10
print(rev)
```

9

#Write a program to check whether a number is palindrome or not

```
num = 121
dup = num
rev = 0
```

```

while num != 0:
    rem = num % 10
    rev = rev * 10 + rem
    num //= 10

if dup == rev :
    print('Palindrome')
else:
    print('Not Palindrome')

Palindrome

#To check composite number
num = 24
for val in range(1, num//2+1):
    if num % val == 0:
        print('Composite Number')
        break
else:
    print('Not a composite number')

```

Composite Number

```

#To check disarium number
num = 135
dup = num
res = 0
power = len(str(num))

while num != 0:
    rem = num % 10
    res += rem ** power
    power = power - 1
    num //= 10

if dup == res :
    print('Disarium Number')
else:
    print('Not a disarium number')

```

Disarium Number

```

#To check Armstrong number
num = 153
power = len(str(num))
res = 0
dup = num

while num != 0:

```

```
rem = num % 10
res += rem ** power
num //= 10
```

```
if dup == res:
    print('Armstrong Number')
else:
    print('Not an armstrong number')
```

Armstrong Number

#To check given number is happy number or not

```
num = 19
```

```
while num > 9:
    res = 0
    while num != 0:
        rem = num % 10
        res += rem ** 2
        num //= 10
    num = res
if num == 7 or num == 1:
    print('Happy Number')
else:
    print('Not a happy number')
```

Happy Number

#To check given number is strong number or not

```
num = 145
```

```
dup = num
```

```
ans = 0
```

```
while num != 0:
    rem = num % 10
    fact = 1
    for val in range(1, rem+1):
        fact *= val
    ans = ans + fact
    num //= 10
```

```
if dup == ans:
    print('Strong Number')
else:
    print('Not a strong number')
```

Strong Number

#To check given no. is emirp number or not

```
num = 13
```

```
res = 0
```

```

dup = num
while num != 0:
    rem = num % 10
    res += rev*10 + rem
    num //= 10

if dup != res:
    for val in range(2, num//2+1):
        if dup % val == 0:
            break
    else:
        for i in range(2, num//2+1):
            if rev % val == 0:
                print('Not an Emirp number')
            else:
                print('Emirp Number')
else:
    print('Not an Emirp number')

```

Emirp Number

#To check given number is Palyprime or not

num = 131

dup = num

```

for val in range(2, num//2+1):
    if num % val == 0:
        print('Not a palyprime number')
        break
else:
    ans = 0
    while num != 0:
        rem = num % 10
        ans = ans * 10 + rem
        num //= 10

    if dup == ans:
        print('Palyprime Number')
    else:
        print('Not a palyprime number')

```

Palyprime Number

#To check given number is Tech number or not

num = 2025

```

if len(str(num)) % 2 == 0:
    half_length = len(str(num)) // 2
    fp = num // (10 ** half_length)

```

```

    sp = num % (10 ** half_length)

    if num == (fp + sp) ** 2:
        print('Tech Number')
    else:
        print('Not a Tech Number')
else:
    print('Not a Tech Number')

```

Tech Number

#To print fibonacci value for a given position

```

pos = 6
if pos == 1 or pos == 2:
    print(pos-1)
else:
    f = 0
    s = 1
    for val in range (pos-2):
        t = f+s
        f, s = s, t
    print(f'The value available in {pos}th position is {t}')

```

The value available in 6th position is 5

#To convert integer number to binary number

```

num = 22
pos = 1
res = 0

while num != 0:
    rem = num % 2
    res = rem *pos + res
    pos = pos*10
    num //= 2

print(res)

```

10110

#To convert binary number to integer number

```

num = 10110
res = 0
power = 0

while num != 0:
    rem = num % 2
    res += rem * (2**power)
    num //= 10
    power += 1

```

```
print(res)
```

22

#To check the given number is evil number or odeous number

```
num = 17
```

```
count, res = 0, 0
```

```
pos = 1
```

```
while num != 0:
```

```
    rem = num % 2
```

```
    if rem == 1:
```

```
        count += 1
```

```
    num = num // 2
```

```
if count % 2 == 0:
```

```
    print('Evil Number')
```

```
else:
```

```
    print('Odeous Number')
```

Evil Number

#To check given number is Fascinating number or not

```
num = 192
```

```
res = str(num*1) + str(num*2) + str(num*3)
```

```
for val in range(1, 10):
```

```
    if str(val) not in res:
```

```
        print('Not a Fascinating number')
```

```
        break
```

```
else:
```

```
    print('Fascinating number')
```

Fascinating number

#GCD of Two numbers

```
num1 = 5
```

```
num2 = 15
```

```
if num1 > num2:
```

```
    gcd = num2
```

```
else:
```

```
    gcd = num1
```

```
while True:
```

```
    if num % gcd == 0 and num2 % gcd == 0:
```

```
        print(gcd)
```

```
        break
```

```
    else:
```

```
        gcd -= 1
```

3

#lcm of Two numbers

```
num1 = 5
num2 = 15
if num1 > num2:
    lcm = num1
else:
    lcm = num2

    while True:
        if lcm % num1 == 0 and lcm % num2 == 0:
            print(lcm)
            break
        else:
            lcm += 1
```

15