In [7]:
```
import random
print(random.randint(1,10))
print(random.uniform(-0.5 , 0.5))
print(random.randint(1,6))
print(random.randint(2,16))
print(random.uniform(-10.0,10))
```

```
6
-0.24029528364892683
6
8
2.450618284715924
```

In [8]:
```
num = int(input("Enter base number : "))
exp = int(input("Enter power value : "))
result = pow(num ,exp)
print("result = ",result)
```

```
Enter base number : 2
Enter power value : 2
result =  4
```

In [ ]:

In [18]:
```
from math import sqrt
x1 = float(input("enter x1 : "))
y1 = float(input("enter y1 : "))
x2 = float(input("enter x2 : "))
y2 = float(input("enter y2 : "))
dist = sqrt((pow(x1 - x2 ,2) + pow(y1 - y2, 2)))
print("Distance between two points is : ",dist)
```

```
enter x1 : 12
enter y1 : 12
enter x2 : 1
enter y2 : 21
Distance between two points is :  14.212670403551895
```

Type *Markdown* and LaTeX: α^2

In [24]:
```
from math import sqrt
a = int(input("enter length of first side : "))
b = int(input("enter length of second side : "))
c = int(input("enter length of third side : "))
s = (a + b + c) / 2
area = sqrt((s * (s-a) * (s-b)* (s-c)))
print("Area of triangle : ",area)
```

```
enter length of first side : 3
enter length of second side : 4
enter length of third side : 5
Area of triangle :  6.0
```

In [27]:
```
import math
height = int(input("Enter height : "))
angle = int(input("enter angle : "))
length = height / math.sin(math.radians(angle))
print("Length of triangle : ",length)
```

```
Enter height : 12
enter angle : 30
Length of triangle :  24.000000000000004
```

In [28]:
```
import math
s = int(input("Enter side of hexagon : "))
area = (6 * pow(s , 2))/ ( 4 * math.tan(math.pi/6))
print("area of hexagon : ",area)
```

```
Enter side of hexagon : 2
area of hexagon :  10.392304845413264
```

looping constructs

In [31]:
```
num = input("Enter a number : ")
r_num = num[::-1]
print("num : ",num )
print("reverse num : ", r_num)
```

```
Enter a number : 11234
num :  11234
reverse num :  43211
```

In [34]:
```
l_limit = int(input("Enter range : "))
u_limit = int(input("Enter range : "))
for num in range(l_limit , u_limit):
    l = len(str(num))
    a_sum = 0
    for i in str(num):
        a_sum = a_sum + pow(int(i),l)
    if(a_sum == num):
        print(num)
```

```
Enter range : 10
Enter range : 200
153
```

In [35]:
```
num = input("Enter number : ")
sum = 0
for i in num:
    sum = sum + int(i)
print("Sum of digits : ",sum)
```

```
Enter number : 1234
Sum of digits :  10
```

In [ ]:
```
num = int(input("Enter number : "))
lsum = 0
while(num > 9):
    for i in str(num) :
        lsum = lsum + int(i)
    num = lsum
print("sum = ",lsum)
print(lsum)
```

```
Enter number : 254
```

In [3]:
```
num1 = int(input("Enter first number : "))
num2 = int(input("ENter second number : "))
gcd = 1
for i in range(2,num1):
    if(num1 % i == 0 and num2 % i == 0):
            gcd = i
lcm = num1 * num2 / gcd
print("Lcm of",num1,"and",num2,"is",lcm)
```

```
Enter first number : 12
ENter second number : 6
Lcm of 12 and 6 is 12.0
```

In [ ]:
```
num = input("Enter the number")
fsum = 0
fact = 1
for digit in num:
    fact = 1
    digit = int(digit)
    while(int(digit) > 0):
        fact = fact * int(digit)
        digit = digit - 1
    #print(fact)
    fsum = fsum + fact
print(fsum)
print(num)
if(fsum == num):
    print(num,"is a strong number")
else:
    print(num,"is not a strong number")
```

In [4]:
```
a = int(input("Enter num1: "))
b = int(input("Enter num2: "))
sum = 0
i = 1
while(i < a):
    if(a % i == 0):
        sum = sum + i
    i = i + 1
sum1 = 0
j =1

while(j < b):
    if(b % j == 0):
        sum1 = sum1 + j
    j = j + 1
if(a == sum1 and b == sum):
    print("both are amicible number ")
else:
    print("both are not amicable")
```

```
Enter num1: 1223
Enter num2: 1234
both are not amicable
```

In [7]:
```
import math
num = int(input("enter x value : "))
exp = int(input("enter exponent value : "))
t0 = 0
for i in range(0, exp +1):
          t0 = t0 + pow(num , i)
print("the result : " , t0)
```

```
enter x value : 24
enter exponent value : 3
the result :  14425
```

In [8]:
```
import math
n = int(input("Enter terms : "))
t0 = 0.0246 * math.pow(10,n)-1-(9*n)
print("the result : " , t0)
```

```
Enter terms : 5
the result :  2414.0
```

In [9]:
```

n = int(input("Enter terms : "))
t0 = 0
for i in range (1,n+1):
    t0 = t0 + (i * (i+1)/2)
print("the result : " , t0)
```

```
Enter terms : 6
the result :  56.0
```

In [11]:
```
first = 0
sec =  1
sum = 0
cur = 0
while(cur < 4000000):
    cur = first + sec
    first = sec
    sec = cur
    if(cur % 2 == 0):
        sum = sum + cur
print("Fibonacci series of even valued terns :",sum)
```

```
Fibonacci series of even valued terns : 4613732
```

In [14]:
```
num = int(input("enter limit : "))
sum = 0
i = 1
while(i < n):
    if(n % i== 0):
        print(i)
        sum = sum + i
    i = i+1
if(sum == n):
    print(n,"is a perfect number")
elif(sum>n):
    print(n,"is a abudant number")
else:
    print(n,"is a deficent number")
```

```
enter limit : 28
perfect divisor of 6 is: 0
1
2
3
6 is a perfect number
```

In [16]:
```
l = int(input("Enter range : "))
l1 = []
for i in range(1):
    s = 0
    l2 = []
    for j in range(1,i+1):
        if( i % j == 0):
            l2.append(j)
    l3 = []
    for k in range(0,len(l2)):
        s = l2[k] + (i//l2[k])
        for x in range(2,s):
            if(s % x == 0):
                l3.append(x)
    if(len(l3) == 0):
        l1.append(i)
print("list of positive integer is : ",l1)
print("sum of all positive integer : ",sum(l1))
```

```
Enter range : 100
list of positive integer is :  [0]

---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-16-135108878f8a> in <module>()
     16         l1.append(i)
     17 print("list of positive integer is : ",l1)
---> 18 print("sum of all positive integer : ",sum(l1))
     19

TypeError: 'int' object is not callable
```

In [ ]:
```

```