Question:-1) Use python to evaluate each of the following expression

A)

In [1]:
```
(9+3)-2*4
```

Out[1]: 4

B)

In [2]:
```
(3**3)-(7+4)
```

Out[2]: 16

C)

In [3]:
```
30*10 // 30+10%3
```

Out[3]: 11

D)

In [4]:
```
20 % (2+7)-(3+7)*(20/2)
```

Out[4]: -98.0

E)

In [5]:
```
(2**5) - (2**4)+(4//4)-(7+7)
```

Out[5]: 3

Question:-2)Write a python program t evaluate squares of no. from 1 to 50.

Solution:

In [6]:
```
x=0
for i in range(1,51):
    x=i*i
    print(x)
```

```
1
4
9
16
25
36
49
64
81
100
121
144
169
196
225
256
289
324
```

```
361
400
441
484
529
576
625
676
729
784
841
900
961
1024
1089
1156
1225
1296
1369
1444
1521
1600
1681
1764
1849
1936
2025
2116
2209
2304
2401
2500
```

Extended code method for Range:

In [7]:
```
square_num = 0
number = 1
for n in range(1,51):
    number = n
    square_num=n*n
    print(f"Square of {number} is {square_num}")
```

```
Square of 1 is 1
Square of 2 is 4
Square of 3 is 9
Square of 4 is 16
Square of 5 is 25
Square of 6 is 36
Square of 7 is 49
Square of 8 is 64
Square of 9 is 81
Square of 10 is 100
Square of 11 is 121
Square of 12 is 144
Square of 13 is 169
Square of 14 is 196
Square of 15 is 225
Square of 16 is 256
Square of 17 is 289
Square of 18 is 324
Square of 19 is 361
Square of 20 is 400
Square of 21 is 441
Square of 22 is 484
Square of 23 is 529
```

```
Square of 24 is 576
Square of 25 is 625
Square of 26 is 676
Square of 27 is 729
Square of 28 is 784
Square of 29 is 841
Square of 30 is 900
Square of 31 is 961
Square of 32 is 1024
Square of 33 is 1089
Square of 34 is 1156
Square of 35 is 1225
Square of 36 is 1296
Square of 37 is 1369
Square of 38 is 1444
Square of 39 is 1521
Square of 40 is 1600
Square of 41 is 1681
Square of 42 is 1764
Square of 43 is 1849
Square of 44 is 1936
Square of 45 is 2025
Square of 46 is 2116
Square of 47 is 2209
Square of 48 is 2304
Square of 49 is 2401
Square of 50 is 2500
```

Question:-3) Enter Python code to find the sum of first 30 natural numbers:

In [8]:
```
n=30
def Sum_of_natural_numbers(n):
    return n*(n+1)//2
result=Sum_of_natural_numbers(n)
print(f"Sum of first 30 nautral numbers is",result)
```

```
Sum of first 30 nautral numbers is 465
```

Question:-4) Find the data type of the following data using python code

A)

In [9]:
```
a=53
type(a)
```

Out[9]:
```
int
```

B)

In [10]:
```
b=14.070
type(b)
```

Out[10]:
```
float
```

C)

In [11]:
```
c=True
type(c)
```

Out[11]:
```
bool
```

D)

In [12]:
```
d="Hello"
type(d)
```

Out[12]:
```
str
```

E)

In [13]:
```
e=8+3j
type(e)
```

Out[13]:
```
complex
```

Question:-5)Write python code to find Max and Min element in the given set

In [14]:
```
set={1,2,3,4,5,6}
M=max(set)
m=min(set)
print(f"The maximum element in the given set is {M} and minimum element is {m}")
```

```
The maximum element in the given set is 6 and minimum element is 1
```

Question:-6) Write python program to evaluate the following

In [18]:
```
x=float(input("Enter desired value for a:"))
y=float(input("Enter desired value for b:"))
z=float(input("Enter desired value for c:"))
x
y
z
print(x+y)
print(x*y)
print(x**y)
print(x/y)
print(x*(y+2))
print(x//y)
print(x**y)
```

```
Enter desired value for a:25
Enter desired value for b:26
Enter desired value for c:23
51.0
650.0
2.220446049250313e+36
0.9615384615384616
700.0
0.0
2.220446049250313e+36
```

Question:-7)Find area and circumference of circle

In [21]:
```
PI=3.14
r=float(input("Input radius: "))
area=PI*(r**2)
circumference=2*PI*r
if r>=0:
    print(f"Area = {area} and circumference = {circumference} are the corresponding val
else:
    print("Please enter valid input")
```

```
Input radius: -8
Please enter valid input
```

Question:-8)Find values of the following expressions

A)

In [31]:
```
import cmath
cmath.sin(45)
```

Out[31]: (0.8509035245341184+0j)

In [33]:
```
import cmath
cmath.pi/4
```

Out[33]: 0.7853981633974483

In [34]:
```
import cmath
cmath.e
```

Out[34]: 2.718281828459045

In [36]:
```
import cmath
cmath.cos(92)
```

Out[36]: (-0.626444447910339+0j)

In [ ]: