

```
1 #Q1 SID-21107052
2 #python program to covert a decimal number to binary
3 #asking user for decimal number input
4 a=int(input("enter the no. : "))
5
6 #printing binary conversion using bin()
7 print(a , "in binary is " , bin(a))
```

input

```
enter the no. : 35
35 in binary is 0b100011
```

```
...Program finished with exit code 0
Press ENTER to exit console.
```

```
1 #Q2 SID-21107052
2 #python program for evalutaing mathematical expression
3 #asking user for input of expression
4 expression=input("enter the expression : ")
5
6 #printing result using eval function
7 print(expression , eval(expression) , sep="=")
```

input

enter the expression : 34+23-11
34+23-11=46

...Program finished with exit code 0
Press ENTER to exit console.

```

1 #Q3 SID-21107052
2 #python program to execute mathematical expressions
3 #importing math library
4 import math
5
6 #a
7 print("(3+4)5 =" , (3+4)*5 )
8
9 #b
10
11 n=int(input("enter value of n : "))
12 print("n(n-1)/2 = " , (n*(n-1))/2)
13
14 #c
15 r=int(input("enter radius : "))
16 print("for 'r' = " , r , " , 4*pi*r^2 = " , 4*math.pi*(r**2))
17
18 #d
19 r_1=int(input("enter value of r :"))
20 a=int(input("enter alpha value : "))
21 b=int(input("enter beta value : "))
22 print("for alpha = " , a , "for beta =" , b )
23 print("value of sqrt(r_1(cos(alpha)^2) + r_1(sin(beta)^2)) = " , math.sqrt(r_1*(math.cos(a*180/math.pi)**2)+(r_1*(math.sin(b*180/math.pi)**2))))
24
25 #e
26 y1=float(input("enter value of y1 : "))
27 y2=float(input("enter value of y2 : "))
28 x1=float(input("enter value of x1 : "))
29 x2=float(input("enter value of x2 : "))
30 ratio=(y2-y1)/(x2-x1)
31 print("(y2-y1)/(x2-x1) =" , + ratio)

```

Input

```

(3+4)5 = 35
enter value of n : 8
n(n-1)/2 = 28.0
enter radius : 7
for 'r' = 7 , 4pi*r^2 = 615.7521601035994
enter value of r : 8
enter alpha value : 1
enter beta value : 2
for alpha = 1 for beta = 2
value of sqrt(r_1(cos(alpha)^2) + r_1(sin(beta)^2)) = 3.501310684567612
enter value of y1 : 1
enter value of y2 : 5
enter value of x1 : 6
enter value of x2 : 7
(y2-y1)/(x2-x1) = 4.0

...Program finished with exit code 0
Press ENTER to exit console.

```

```
1 #Q4 SID-21107052
2 #python program for printing the sequence of numbers in range
3 #using for loop
4
5 #a
6 for a in range(5):
7     print(a , end="" )
8 print("\n")
9
10 #b
11 for b in range(3,10):
12     print(b , end="" )
13 print("\n")
14
15 #c
16 for c in range(4,13,3):
17     print(c , end="" )
18 print("\n")
19
20 #d
21 for d in range(15,5,-2):
22     print(d , end="" )
23
24 #e
25 print("\n")
26 for e in range(5,3):
27     print(e, end="")
```

input

01234
3456789
4710
15131197

...Program finished with exit code 0
Press ENTER to exit console.

```
1 #Q5 SID-21107052
2 #python program for finding molecular weight of a carbohydrate
3 #asking user for input of number of atoms in carbohydrate
4 H_atoms=int(input("enter no. of hydrogen atoms : "))
5 C_atoms=int(input("enter no. of carbon atoms : "))
6 O_atoms=int(input("enter no. of oxygen atoms : "))
7
8 #finding total mass for each elements
9 Oxygen_mass=(O_atoms*15.9994)
10 Hydrogen_mass=(H_atoms*1.00794)
11 Carbon_mass=(C_atoms*12.0107)
12
13 #adding element's mass to get total mass of carbohydrate
14 total_mass=Oxygen_mass+Hydrogen_mass+Carbon_mass
15
16 #printing mass of carbohydrate
17 print("total molecular weight of carbohydrate is" , + total_mass)
```

input

```
enter no. of hydrogen atoms : 10
enter no. of carbon atoms : 5
enter no. of oxygen atoms : 2
total molecular weight of carbohydrate is 102.1317
```

```
...Program finished with exit code 0
Press ENTER to exit console.
```