

```
In [4]: #1. Write a Python program to add 2 Numbers with user input.
#Reading variables from user defined
x = int(input("Enter First Number:"))
y = int(input("Enter Second Number:"))
#Printing output with print function along with variable name to be printed
print("The Sum of First number and Second Number is", x+y)
```

```
Enter First Number:2
Enter Second Number:3
The Sum of First number and Second Number is 5
```

```
In [2]: #2. Write a Python program to find the area of Triangle.
#Reading variables from user defined
b= int(input("Enter the value of base of Triangle:"))
h= int(input("Enter the value of height of Triangle:"))
#Printing output with print function along with variable name to be printed
print("The Area of the Triangle is",0.5*(b*h), "unit")
```

```
Enter the value of base of Triangle:2
Enter the value of height of Triangle:3
The Area of the Triangle is 3.0 unit
```

```
In [7]: #3. Write a Python program to find the area of Circle.
#importing math library
import math
#Reading variables from user defined
r = int(input("Enter the radius of the Circle:"))
y = math.pi
#Printing output with print function along with variable name to be printed
print("The Value of pi is",y)
print("The Area of the circle is",y*(r*r))
```

```
Enter the radius of the Circle:2
The Value of pi is 3.141592653589793
The Area of the circle is 12.566370614359172
```

```
In [9]: #4. Write a Python program to calculate the area of a trapezoid.
#Reading variables from user defined
a = int(input("Enter the value of one parallel side of Trapezoid"))
b = int(input("Enter the value of second parallel side of Trapezoid"))
h = int(input("Enter the value of height of Trapezoid"))
#Printing output with print function along with variable name to be printed
print("The Area of the Trapezoid is",0.5*h*(a+b), "unit")
```

```
Enter the value of one parallel side of Trapezoid2
Enter the value of second parallel side of Trapezoid3
Enter the value of height of Trapezoid5
The Area of the Trapezoid is 12.5 unit
```

```
In [11]: #5. Write a Python program to calculate volume and Total area of a cylinder.
#importing math library
import math
#Reading variables from user defined
r = int(input("Enter the radius of Cylinder"))
h = int(input("Enter the height Cylinder"))
x =math.pi
#Printing output with print function along with variable name to be printed
```

```
print("The Total Surface Area of the Cylinder is",(2*x*r*h)+(2*x*r*r), "unit")
print("The Volume of the Cylinder is",(x*r*r*h), "unit")
```

Enter the radius of Cylinder2

Enter the height Cylinder3

The Total Surface Area of the Cylinder is 62.83185307179586 unit

The Volume of the Cylinder is 37.69911184307752 unit

```
In [12]: #6. Write a Python program to convert Fahrenheit to Celsius and vice versa.
#Reading variables from user defined
F=float(input("Enter the temperature in Fahrenheit"))
print("The temperature in Celsius corresponds to given temperature in Fahrenheit is",
C=float(input("Enter the temperature in Celsius"))
print("The temperature in Fahrenheit corresponds to given temperature in Celsius is",
```

Enter the temperature in Fahrenheit78

The temperature in Celsius corresponds to given temperature in Fahrenheit is 25.555555555555557

Enter the temperature in Celsius45

The temperature in Fahrenheit corresponds to given temperature in Celsius is 113.0

```
In [14]: #7. Write a Python program to convert hours into minutes and seconds.
#Reading variables from user defined
H= int(input("Enter the number of hours you want to convert in minutes and seconds"))
#Printing output with print function along with variable name to be printed
print("The minutes corresponds to given number of hours are, Minutes=",H*60)
print("The seconds corresponds to given number of hours are, seconds=", H*60*60)
```

Enter the number of hours you want to convert in minutes and seconds5

The minutes corresponds to given number of hours are, Minutes= 300

The seconds corresponds to given number of hours are, seconds= 18000

```
In [15]: #8. Write a Python program to calculate the square root of a positive number.
#importing math library
import math
#Reading variables from user defined
a = float(input("Enter the positive number"))
#Formula to be provided in variable x with formula
x =math.sqrt(a)
#Printing output with print function along with variable name to be printed
print("The square root of entered number is",x)
```

Enter the positive number4

The square root of entered number is 2.0

```
In [17]: #9. Write a Python program to convert degree to radian
#importing math library
import math
#Formula to find math
pie=math.pi
#Reading variables from user defined
d= int(input("Enter the value of degree measure which you want to convert in radian"))
r= (pie*d)/180
print("The radian measure corresponds to degree measure is",r)
```

Enter the value of degree measure which you want to convert in radian45

The radian measure corresponds to degree measure is 0.7853981633974483

```
In [21]: #10. Enter days and convert into 'years, months, days : Consider 1year—365 days, 1mon
```

```
#Reading variables from user defined
days=int(input("Enter number of days:"))
y=days//365
m=(days%365)//30
d=(days%365)%30
print(y,"years",m,"months",d,"days")
```

Enter number of days:68
0 years 2 months 8 days

In [23]: *#11. Enter two numbers and swap values without using temporary variable*

```
#Reading variables from user defined
a=int(input("Enter number 1:"))
b=int(input("Enter number 2:"))
a=a+b
b=a-b
a=a-b
print("After swapping a:",a,"b:",b)
```

Enter number 1:2
Enter number 2:3
After swapping a: 3 b: 2

In [25]: *#12. Relational operators*

```
a=20
b=2
print(a>b)
print(a<b)
print(a>=b)
print(a<=b)
print(a==b)
print(a!=b)
```

True
False
True
False
False
True

In [27]: *#13. Logical operators*

```
a=20
b=10
c=30
print(a>b and a>c)
print(a>b or a>c)
print(not a>b)
print(not a>c)
```

False
True
False
True

In [28]: *#14. Assignment operator*

```
x=10
x1=10
x2=10
x3=10
```

```
x4=10
x5=10
x6=2
x+=10
print(x)
x1-=10
print(x1)
x2*=10
print(x2)
x3/=10
print(x3)
x4//=10
print(x4)
x5%=10
print(x5)
```

```
20
0
100
1.0
1
0
```

In [3]: *#15. Enter two numbers and swop votues with using temporary vortobte*

```
a=int(input("Enter number 1:"))
b=int(input("Enter number 2:"))
c=a
a=b
b=c
print("After swapping a:",a,"b:",b)
```

```
Enter number 1:2
Enter number 2:3
After swapping a: 3 b: 2
```

In [9]: *#16. #Number system (Just for information)*

```
a=10
b=0b111
c=0o123
d=0xABC
print (bin(a))
print (bin(b))
print(bin(c))
print(bin(d))
```

```
0b1010
0b111
0b1010011
0b101010111100
```

In [10]: *#17. #Number system (Just for information)*

```
a=10
b=0b111
c=0o123
d=0xABC
print(hex(a))
print(hex(b))
```

```
print (hex(c))
print (hex(d))
```

```
0xa
0x7
0x53
0xabc
```

```
In [11]: #18. Demonstrate the use of membership function
x="ABCDEF"
print('P' in x)
```

```
False
```

```
In [3]: #19. Python Program to Find the Gravitational Force between Two Objects
m1=float(input("Enter the first mass: "))
m2=float(input("Enter the second mass: "))
r=float(input("Enter the distance between the centres of the masses: "))
G=6.673*(10**-11)
f=(G*m1*m2)/(r**2)
print("Hence, the gravitational force is: ",round(f,2),"N")
```

```
Enter the first mass: 1000000
Enter the second mass: 500000
Enter the distance between the centres of the masses: 20
Hence, the gravitational force is:  0.08 N
```

```
In [4]: #20. Python Program to Find Simple Interest
principle=float(input("Enter the principle amount:"))
time=int(input("Enter the time(years):"))
rate=float(input("Enter the rate:"))
simple_interest=(principle*time*rate)/100
print("The simple interest is:",simple_interest)
```

```
Enter the principle amount:200
Enter the time(years):5
Enter the rate:5
The simple interest is: 50.0
```

```
In [7]: #21. Write a Python program to solve (x + y) * (x + y).
x, y = 4, 3
result = x * x + 2 * x * y + y * y
print(result)
```

```
49
```

```
In [8]: #22. Python Program to Read a Number n and Compute n+nn+nnn
n=int(input("Enter a number n: "))
temp=str(n)
t1=temp+temp
t2=temp+temp+temp
comp=n+int(t1)+int(t2)
print("The value is:",comp)
```

```
Enter a number n: 5
The value is: 615
```

```
In [9]: #23. Write a Python program to calculate the hypotenuse of a right angled triangle.
from math import sqrt
print("Input lengths of shorter triangle sides:")
```

```

a = float(input("a: "))
b = float(input("b: "))
c = sqrt(a**2 + b**2)
print("The length of the hypotenuse is:", c )

```

Input lengths of shorter triangle sides:
a: 3
b: 4
The length of the hypotenuse is: 5.0

In [11]: *#24. Write a python program to calculate body mass index bmi the formula to find bmi is $BMI = \frac{\text{weight}}{\text{height}^2}$*

```

height = float(input("Input your height in Feet: "))
weight = float(input("Input your weight in Kilogram: "))
print("Your body mass index is: ", weight / (height * height))

```

Input your height in Feet: 6.1
Input your weight in Kilogram: 70
Your body mass index is: 1.8812147272238648

In [12]: *#25. Write a python program to calculate the midpoints of a line*

```

print('\nCalculate the midpoint of a line :')

```

```

x1 = float(input('The value of x (the first endpoint) '))
y1 = float(input('The value of y (the first endpoint) '))

x2 = float(input('The value of x (the first endpoint) '))
y2 = float(input('The value of y (the first endpoint) '))

x_m_point = (x1 + x2)/2
y_m_point = (y1 + y2)/2
print();
print("The midpoint of line is :")
print( "The midpoint's x value is: ",x_m_point)
print( "The midpoint's y value is: ",y_m_point)
print();

```

Calculate the midpoint of a line :
The value of x (the first endpoint) 2
The value of y (the first endpoint) 3
The value of x (the first endpoint) 4
The value of y (the first endpoint) 5

The midpoint of line is :
The midpoint's x value is: 3.0
The midpoint's y value is: 4.0

In [13]: *#26. Python Program to make calculator*
#Take two variables as user defined (using Chapter 1)

```

a=int(input("Enter a:"))
b=int(input("Enter b:"))
#defining calculator operations i.e. add,subtract,multiply,divide,modulus(remainder)
c=a+b
d=a-b
e=a/b
f=a%b
g=a*b

```

```
print("Addition of two numbers is:",c)
print("Subtraction of two numbers is:",d)
print("Divison of two numbers is:",e)
print("Modulus (remainder) of two numbers is:",f)
print("Multiplication of two numbers is:",g)
```

Enter a:2

Enter b:3

Addition of two numbers is: 5

Subtraction of two numbers is: -1

Divison of two numbers is: 0.6666666666666666

Modulus (remainder) of two numbers is: 2

Multiplication of two numbers is: 6