```
#1 This program prints Hello, world!
print('Hello, world!')

#2 This program adds two numbers
num1 = 1.5
num2 = 6.3
# Add two numbers
sum = num1 + num2
# Display the sum
print('The sum of {0} and {1} is {2}'.format(num1, num2, sum))

#3 Python Program to calculate the square root
#Note: change this value for a different result
num = 8
# To take the input from the user
#num = float(input('Enter a number: '))
num_sqrt = num ** 0.5
print('The square root of %0.3f is %0.3f'%(num ,num_sqrt))

#4 Python Program to find the area of triangle
a = 5
b = 6
c = 7
# Uncomment below to take inputs from the user
# a = float(input('Enter first side: '))
# b = float(input('Enter second side: '))
# c = float(input('Enter third side: '))

# calculate the semi-perimeter
s = (a + b + c) / 2

# calculate the area
area = (s*(s-a)*(s-b)*(s-c)) ** 0.5
print('The area of the triangle is %0.2f' %area)

#5 Python program to swap two variables
x = 5
y = 10
# To take inputs from the user
#x = input('Enter value of x: ')
#y = input('Enter value of y: ')

# create a temporary variable and swap the values
temp = x
x = y
y = temp
print('The value of x after swapping: {}'.format(x))
print('The value of y after swapping: {}'.format(y))

#6 Python Program to Convert Kilometers to Miles
# Taking kilometers input from the user
kilometers = float(input("Enter value in kilometers: "))
```

```
# conversion factor
conv_fac = 0.621371

# calculate miles
miles = kilometers * conv_fac
print('%0.2f kilometers is equal to %0.2f miles' %(kilometers,miles))

#7 Python Program to convert temperature in celsius to fahrenheit

# change this value for a different result
celsius = 37.5

# calculate fahrenheit
fahrenheit = (celsius * 1.8) + 32
print('%0.1f degree Celsius is equal to %0.1f degree Fahrenheit' %(celsius,fahrenheit))

#9 Python Program to Check if a Number is Positive, Negative or 0

num = float(input("Enter a number: "))
if num > 0:
  print("Positive number")
elif num == 0:
  print("Zero")
else:
  print("Negative number")

#10 Python program to check if the input number is odd or even.
# A number is even if division by 2 gives a remainder of 0.
# If the remainder is 1, it is an odd number.

num = int(input("Enter a number: "))
if (num % 2) == 0:
  print("{0} is Even".format(num))
else:
  print("{0} is Odd".format(num))

#9 Python program to check if year is a leap year or not
year = 2000

# To get year (integer input) from the user
# year = int(input("Enter a year: "))

# divided by 100 means century year (ending with 00)
# century year divided by 400 is leap year
if (year % 400 == 0) and (year % 100 == 0):
   print("{0} is a leap year".format(year))

# not divided by 100 means not a century year
# year divided by 4 is a leap year
elif (year % 4 ==0) and (year % 100 != 0):
   print("{0} is a leap year".format(year))
```

```
# if not divided by both 400 (century year) and 4 (not century year)
# year is not leap year
else:
   print("{0} is not a leap year".format(year))
```