Task 1 : Python fundamentals

1. Find the last digit of 7^35.  
   x=7\*\*35  
   print(str(x)[-1])  
   3
2. Find the remainder when 987654321 is divided by 123456789. remainder=987654321%123456789  
   print(remainder)  
   9
3. Predict the output of the following lines:

**print(5 - 3)  
2**

**print(5 - - 3)  
8**

**print(5 - - - 3)  
2**

**print(5 - - - - 3)  
8**

**print(5 - - - - - 3)  
2**

1. Parenthesize this expression so that the result is zero:

**2 \*\* 2 - 2 - 2 / 2  
((2\*\*2)-2-2)/2**

1. Predict the output of the following expression:

**0 == 0 < 1 < 2 < 3 > 2 > 1 > 0 == 0  
True**

1. If **s** is a string of length n, how many characters does **n \*s** have, where **n** is some positive integer?  
   n\*len(s)  
   s=”hello”  
   n=len(s)  
   print(len(n\*s))
2. What will be the outcome of the following expression if x and y are two strings?

**len(x) + len(y) == len(x + y)  
True**

1. What does the following code do?

**print(input())  
The code waits for the input user and will print if we input any text.**

1. Consider the following code snippet. If the output of the code snippet given above is 123, what is the sequence of inputs entered by the user?

**print(input() + input() + input())  
print(input(123)+input()+input())**

1. Find the number of digits in 7\*\*100. Treat this as a programming question and not as a mathematical question. You should be able to do this using the concepts you have learned.  
   x=input(7\*\*100)  
   print(len(x))
2. Accept a positive integer, x, as input from the user. Without using the \* symbol anywhere in your code, print 10 \* x, i.e., the product of the integer input and the number 10.  
   x = int(input("Enter a number: "))  
   result = 0  
   for \_ in range(10):  
    result+=x  
   print(result)
3. Accept the length and breadth of a rectangle as input and compute its area.   
   length=int(input("Enter length"))  
   length=int(input("Enter breadth"))  
   area=length\*breadth  
   print(area)
4. Accept a positive real number x as input and print the greatest integer less than or equal to x. Hint: floor function  
   import math  
   x=float(input(“Enter a number”))  
   print(math.floor(x))
5. Accept a positive real number x as input and print the smallest integer greater than or equal to x. Hint: ceil function  
   import math  
   x=float(input(“Enter a number”))  
   print(math.ceil(x))
6. A user enters two integers as input and this is the output returned by the code:
   * a = int(input())
   * b = int(input())
   * print(0 < a < b < 10)
   * print(b - a == 1)

How many different pairs (a, b) of inputs are possible for such a scenario?  
8

1. Accept a two-digit number as input and print the sum of its digits ( Hint : Use modulus and division)  
   a = int(input("Enter a number"))  
   ones=a%10  
   tens=a//10  
   sum=ones+tens  
   print(sum)