

# L7 : Functions Practice Questions in python

## 1-Tut : Predict the Output

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What will be the output of the following code?

```
def func(a):  
    a = a + 10  
    return a  
a = 5  
func(a)  
  
print(a)
```

### Answer

[Type here : 5](#)

Correct Answer

## 2-Tut : Predict the Output

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What will be the output of the following code?

```
def square(a):  
    ans = a*a  
    return ans  
  
a = 4  
a = square(a)  
print(a)
```

### Answer

[Type here : 16](#)

Correct Answer

## 3-Tut : Predict the Output

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What will be the output of the following code?

```
a = 14  
def f():  
    a=12  
f()  
  
print(a)
```

## Options

12

14

a is not defined

None of the above

Correct Answer : B

## 4-Tut: Predict the Output

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What will be the output of the following code?

```
a=14
def f():
    global a
    a=12
f()
print(a)
```

## Options

12

14

a is not defined

None of the above

Correct Answer : A

5-Tut : What will be the output of the following code?

```
a = 14
def f():
    a = 12
    return a
a = f()
print(a)
```

## Options

12

14

a is not defined

None of them

Correct Answer : A

[Default Parameters in functions](#)

## 6-Tut : Predict the Output

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What will be the output of the following code?

```
def function(a,b,c=1):
```

```
    return a+b-c
value = function(10,12)
print(value)
```

### Options

21

22

23

None of the above

Correct Answer : A

### 7-Tut : Predict the Output

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What will be the output of the following code ?

```
def function(a,b,c=1):
    return a+b-c
value = function(10,12,5)

print(value)
```

### Options

21

22

23

17

Correct Answer : D

### 8-Tut : Predict the Output

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What will be the output of the following code?

```
def function(a,b,c=1,d=5):
    return a+b+c+d
value = function(1,2,d=7)

print(value)
```

### Options

9

11

3

10

Correct Answer : B

### 9-Ass : Fahrenheit to Celsius Function

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Given three values - Start Fahrenheit Value (S), End Fahrenheit value (E) and Step Size (W), you need to convert all Fahrenheit values from Start to End at the gap of W, into their corresponding Celsius values and print the table.

**Input Format :** 3 integers - S, E and W respectively

**Output Format :** Fahrenheit to Celsius conversion table. One line for every Fahrenheit and Celsius Fahrenheit value. Fahrenheit value and its corresponding Celsius value should be separate by tab ("\t")

**Constraints :**

$0 \leq S \leq 1000$

$0 \leq E \leq 1000$

$0 \leq W \leq 1000$

**Sample Input 1:**

0  
100  
20

**Sample Output 1:**

0 -17  
20 -6  
40 4  
60 15  
80 26  
100 37

**Sample Input 2:**

120  
200  
40

**Sample Output 2:**

120 48  
160 71  
200 93

**Explanation for Sample Output 2 :**

Start value is 120, end value is 200 and step size is 40. Therefore, the values we need to convert are 120,  $120 + 40 = 160$ , and  $160 + 40 = 200$ .

The formula for converting Fahrenheit to Celsius is:

$\text{Celsius Value} = (5/9) * (\text{Fahrenheit Value} - 32)$

Plugging 120 into the formula, the celsius value will be  $(5 / 9) * (120 - 32) \Rightarrow (5 / 9) * 88 \Rightarrow (5 * 88) / 9 \Rightarrow 440 / 9 \Rightarrow 48.88$

But we'll only print 48 because we are only interested in the integral part of the value.

```
1. def printTable(start,end,step):
2.     #Implement Your Code Here
3.     while start <= end:
4.         cel = ( ( start-32) * 5) / 9 )
5.         print(start, int(cel))
6.         start = start + step
```

```
7.
8. s = int(input())
9. e = int(input())
10. step = int(input())
11. printTable(s,e,step)
```

## 10-Ass : Fibonacci Member

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Given a number N, figure out if it is a member of the fibonacci series or not. Return true if the number is a member of the fibonacci series, else false.

Fibonacci Series is defined by the recurrence

$$F(n) = F(n-1) + F(n-2)$$

where  $F(0) = 0$  and  $F(1) = 1$

**Input Format :** Integer N

**Output Format :** true or false

**Constraints :**  $0 \leq n \leq 10^4$

**Sample Input 1 :**5

**Sample Output 1 :**true

**Sample Input 2 :**14

**Sample Output 2 :** false

```
1. def checkMember(n):
2.     #Implement Your Code Here
3.     f0 = 0
4.     f1 = 1
5.     if n == 0:
6.         return True
7.     else:
8.         while(f1 <= n):
9.             if(f1 == n):
10.                 return True
11.                 temp = f1
12.                 f1 = f0 + f1
13.                 f0 = temp
14.             else:
15.                 return False
16.         #pass
17.
18. n=int(input())
19. if(checkMember(n)):
20.     print("true")
21. else:
22.     print("false")
```

Method 2 : Property of fibonacci series :  $5*n*n + 4$  or  $5*n*n - 4$  is a perfect square

```
1. import math
2. def isPerfectSquare(x):
3.     s = int(math.sqrt(x))
4.     return s*s == x
5. def checkMember(n):
6.     return isPerfectSquare(5*n*n + 4) or isPerfectSquare(5*n*n - 4)
7.
8. n=int(input())
9. if(checkMember(n)):
10.    print("true")
11. else:
12.    print("false")
```

Note :  $!=$  , is not : are two diff things “is not” check whether they are pointing to the same location or not whereas “  $!=$  ” checks values are equal or not

### 11-Ass : **Palindrome number**

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Write a program to determine if a given number is palindrome or not. Print true if it is palindrome, false otherwise.

**Palindromes are the numbers for which the reverse is exactly the same as the original one. For eg. 121**

**Sample Input 1 :** 121

**Sample Output 1 :** true

**Sample Input 2 :** 1032

**Sample Output 2 :** false

```
1. def checkPalindrome(num):
2.     if num == 0:
3.         return True
4.     num1 = num
5.     numstr=""
6.     while num1 != 0:
7.         r = num1 % 10
8.         numstr += str(r)
9.         num1 = num1//10
10.    num1 = int(numstr)
11.    return num1 == num
12. num = int(input())
13. isPalindrome = checkPalindrome(num)
14. if(isPalindrome):
15.     print('true')
16. else:
17.     print('false')
```

## 12-Ass: Check Armstrong

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Write a Program to determine if the given number is Armstrong number or not. Print true if number is armstrong, otherwise print false.

**An Armstrong number is a number (with digits  $n$ ) such that the sum of its digits raised to  $n$ th power is equal to the number itself.**

For example,

371, as  $3^3 + 7^3 + 1^3 = 371$

1634, as  $1^4 + 6^4 + 3^4 + 4^4 = 1634$

**Input Format :** Integer  $n$

**Output Format :** true or false

**Sample Input 1 :** 1

**Sample Output 1 :** true

**Sample Input 2 :** 103

**Sample Output 2 :** false

```
1. ## Read input as specified in the question.
2. ## Print output as specified in the question.
3. def armstrong(n):
4.     psod = 0
5.     n1 = n
6.     while n1 != 0:
7.         r = n1 % 10
8.         psod += r**length
9.         n1 = n1 // 10
10.    if psod == n:
11.        print('true')
12.    else:
13.        print('false')
14.
15. N = input()
16. length = len(N)
17. N = int(N)
18. armstrong(N)
19.
```