**BASIC PROGRAMMING ASSIGNMENT\_20 -SUBMITTED BY SAMUEL DEVDAS**

Question1

Create a function that takes a list of strings and integers, and filters out the list so that it returns a list of integers only.

**Examples**

filter\_list([1, 2, 3, "a", "b", 4]) ➞ [1, 2, 3, 4]

filter\_list(["A", 0, "Edabit", 1729, "Python", "1729"]) ➞ [0, 1729]

filter\_list(["Nothing", "here"]) ➞ []

Ans.

def filter\_list(lst):

filtered=[]

for elem in lst:

if type(elem)==int:

filtered.append(elem)

return(filtered)

filter\_list(["A", 0, "Edabit", 1729, "Python", "1729"])`

Question2

Given a list of numbers, create a function which returns the list but with **each element's index in the list added to itself**. This means you add 0 to the number at index 0, add 1 to the number at index 1, etc...

### Examples

add\_indexes([0, 0, 0, 0, 0]) ➞ [0, 1, 2, 3, 4]

add\_indexes([1, 2, 3, 4, 5]) ➞ [1, 3, 5, 7, 9]

add\_indexes([5, 4, 3, 2, 1]) ➞ [5, 5, 5, 5, 5]

Ans.

def add\_indexes(lst):

out=[(lst[i]+i) for i in range(len(lst))]

return out

add\_indexes([5, 4, 3, 2, 1])

Question3

Create a function that takes the height and radius of a cone as arguments and returns the volume of the cone rounded to the nearest hundredth. See the resources tab for the formula.



### Examples

cone\_volume(3, 2) ➞ 12.57

cone\_volume(15, 6) ➞ 565.49

cone\_volume(18, 0) ➞ 0

Ans.

import math

def cone\_volume(height,radius):

cone\_vol=math.pi\*(radius\*\*2)\*height/3

return round(cone\_vol,2)

cone\_volume(3,2)

Question4

This Triangular Number Sequence is generated from a pattern of dots that form a triangle. The first 5 numbers of the sequence, or dots, are:

1, 3, 6, 10, 15

This means that the first triangle has just one dot, the second one has three dots, the third one has 6 dots and so on.

Write a function that gives the number of dots with its corresponding triangle number of the sequence.

### Examples

triangle(1) ➞ 1

triangle(6) ➞ 21

triangle(215) ➞ 23220

Ans.

def triangle(n):

seq=n\*(n+1)/2

return seq

triangle(215)

Question5

Create a function that takes a list of numbers between 1 and 10 (excluding one number) and returns the missing number.

### Examples

missing\_num([1, 2, 3, 4, 6, 7, 8, 9, 10]) ➞ 5

missing\_num([7, 2, 3, 6, 5, 9, 1, 4, 8]) ➞ 10

missing\_num([10, 5, 1, 2, 4, 6, 8, 3, 9]) ➞ 7

Ans.

def missing\_num(num):

one\_to\_ten=[1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

for elem in one\_to\_ten:

if elem not in num:

return(elem)

missing\_num([7, 2, 3, 6, 5, 9, 1, 4, 8])