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**NPTEL (<https://swayam.gov.in/explorer?ncCode=NPTEL>) » Programming, Data Structures And**

**Algorithms Using Python (course)**

Announcements (announcements)

**About the Course ([https://swayam.gov.in/nd1\\_noc19\\_cs40/preview](https://swayam.gov.in/nd1_noc19_cs40/preview))**    Ask a Question (forum)

Progress (student/home)    Mentor (student/mentor)

## Online Test 2, Question 5

**Due on 2019-09-26, 22:00 IST**

Course  
outline

How to access  
the portal

Week 1:  
Introduction

Week 1 Quiz

Week 2:  
Basics of  
Python

Week 2 Quiz

Week 2  
Programming  
Assignment

Week 3: Lists,  
inductive  
function

## Instructions

This is the second of two online programming tests.

- These tests account for 25% of the total evaluation for the course.
- The duration of the test is 2 hours.
- The first test was from 9:30-11:30 am and the second is from 8:00-10:00 pm, on Thursday, 26 September 2019.
- You can attempt either of the tests. The best score will be counted..

## Question 5

A positive integer  $n$  is a sum of three squares if  $n = i^2 + j^2 + k^2$  for integers  $i, j, k$  such that  $i \geq 1, j \geq 1$  and  $k \geq 1$ . For instance, 29 is a sum of three squares because  $10 = 2^2 + 3^2 + 4^2$ , and so is 6 ( $1^2 + 1^2 + 2^2$ ). On the other hand, 16 and 20 are not sums of three squares.

Write a Python function `sumof3squares(n)` that takes a positive integer argument and returns `True` if the integer is a sum of three squares, and `False` otherwise.

definitions,  
sorting

**Week 3  
Programming  
Assignment**

**Week 4:  
Sorting,  
Tuples,  
Dictionaries,  
Passing  
Functions, List  
Comprehension**

**Week 4 Quiz**

**Week 4  
Programming  
Assignment**

**Week 5:  
Exception  
handling,  
input/output,  
file handling,  
string  
processing**

**Week 5  
Programming  
Assignment**

**Week 6:  
Backtracking,  
scope, data  
structures;  
stacks,  
queues and  
heaps**

**Week 6 Quiz**

**Week 7:  
Classes,  
objects and  
user defined  
datatypes**

**Week 7 Quiz**

**Private Test cases used  
for evaluation**

Input	Expected Output	Actual Output	Status
sumof3squares(17)	True\n	True\n	Pas sed
sumof3squares(19)	True\n	True\n	Pas sed
sumof3squares(103)	False\n	False\n	Pas sed
sumof3squares(119)	False\n	False\n	Pas sed

Due Date Exceeded.  
4 out of 4 tests passed.  
You scored 100.0/100.

Your last recorded submission was :

```
1 def sumof3squares(n):
2     i = 1
3     while i*i <= n:
4         j = 1
5         while(j*j <= n):
6             k=1
7             while(k*k <= n):
8                 if (i*i + j*j +k*k == n):
9                     return True
10                k+=1
11            j+=1
12        i+=1
13    return False
14
15 sumof3squares(16)
16 import ast
17
18 def toint(inp):
19     inp = ast.literal_eval(inp)
20     return (inp)
21
22 fncall = input()
23 lparen = fncall.find("(")
24 rparen = fncall.rfind(")")
25 fname = fncall[lparen]
26 farg = fncall[lparen+1:rparen]
27
28 if fname == "sumof3squares":
29     arg = toint(farg)
30     print(sumof3squares(arg))
31
32
```

**Week 8:  
Dynamic  
programming,  
wrap-up**

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**Week 8  
Programming  
Assignment**

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**Download  
videos**

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**Text  
Transcripts**

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**Online  
Programming  
Test - Sample**

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**Online  
Programming  
Test 1, 26 Sep  
2019, 09:30-  
11:30**

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**Online  
Programming  
Test 2, 26 Sep  
2019, 20:00-  
22:00**

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● Online Test 2,  
Question 1  
(/noc19\_cs40/progassignment?  
name=121)

● Online Test 2,  
Question 2  
(/noc19\_cs40/progassignment?  
name=122)

● Online Test 2,  
Question 3  
(/noc19\_cs40/progassignment?  
name=123)

● Online Test 2,  
Question 4  
(/noc19\_cs40/progassignment?  
name=124)

● **Online Test 2,  
Question 5**

**(/noc19\_cs40/progassignment?  
name=125)**

● Online Test 2,  
Question 6  
(/noc19\_cs40/progassignment?  
name=126)

● Online Test 2,  
Question 7  
(/noc19\_cs40/progassignment?  
name=127)

● Online Test 2,  
Question 8  
(/noc19\_cs40/progassignment?  
name=128)

● Online  
Programming  
Test 2, 26 Sep  
2019, 20:00-  
22:00 (unit?  
unit=111&lesson=129)