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MITx: 6.00.1x Introduction to Computer Science and Programming U..

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## Exercise 1

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## **Exercise 1**

11 points possible (graded)

## **ESTIMATED TIME TO COMPLETE: 12 minutes**

Entrance Survey

In this problem, we'll examine how indirection works. Consider the following definitions:

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$$a = [1, 2, 3, 4, 0]$$
  
 $b = [3, 0, 2, 4, 1]$ 

c = [3, 2, 4, 1, 5]

- ▶ Week 1: Python Basics
- 1. What is the value of the following expressions? If you think there will be an error, please type in 'error' (without quotes) in the input box.
- ▶ Week 2: Simple <u>Programs</u>
- 1. a[0]

▶ Week 3: **Structured** <u>Types</u>

2. b[1]

Week 4: Good **Programming Practices** 

Midterm Exam

3. a[a[1]]

Week 5: Object <u>Oriented</u> **Programming** 

4. b[b[2]]

<ul><li>Week 6: Algorithmic Complexity</li></ul>	5. a[b[2]]
11. Computational Complexity Finger Exercises	
12. Searching and Sorting Algorithms Finger Exercises	6. c[a[b[3]]]
Problem Set 6 Problem Set due Mar 9, 2017 15:30 PST	7. a[c[a[b[0]]]]
► Week 7: Plotting	
► Exit Survey	8. a[c[a[b[3]]]]
► <u>Sandbox</u>	
	2. Assume we have defined the following function:
	<pre>def foo(L):     val = L[0]     while (True):        val = L[val]</pre>
	Which of the following statement(s) will result in an infinite loop?
	foo(a)
	foo(b)
	[ foo(c)

3. Consider the following code:

```
num = ???
L = [5, 0, 2, 4, 6, 3, 1]
val = 0
for i in range(0, num):
    val = L[L[val]]
print(val)
```

1. What is the smallest value that \[ num \] can be such that the number 3 is printed?

 $\bigcirc$  0

 $\bigcirc$  1

 $\bigcirc$  3

0 5

Impossible

2. Now, we redefine L to be:

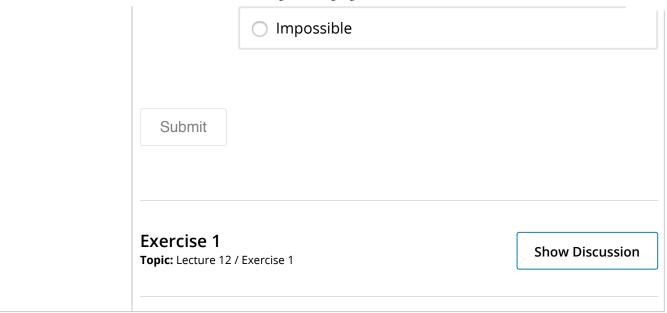
$$L = [2, 0, 1, 5, 3, 4]$$

What is the smallest value that <code>num</code> can be such that the number 3 is printed?

0

 $\bigcirc$  3

O 5



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