



[< Previous](#)

11 of 18 ▾

[Next >](#)

**Exercise 4**

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## Exercise 4

5/5 points (graded)

**ESTIMATED TIME TO COMPLETE: 8 minutes**

Below are some short Python programs. For each program, answer the associated question.

Try to answer the questions without running the code. Check your answers, then run the code for the ones you get wrong.

This question is going to ask you what some simple loops print out. If you're asked what code like this prints:

```
num = 5
if num > 2:
    print(num)
    num -= 1
print(num)
```

write what it prints out, separating what appears on a new line by a comma and a space. So the answer for the above code would be:

5, 4

If a given loop will not terminate, write the phrase 'infinite loop' (no quotes) in the box. Recall that you can stop an infinite loop in your program by typing CTRL+c in the console.

Note: What does `+=`, `-=`, `*=`, `/=` stand for?

1.

```
num = 0
while num <= 5:
    print(num)
    num += 1

print("Outside of loop")
print(num)
```

0, 1, 2, 3, 4, 5, "Outside of loop", 6



2.

```
numberOfLoops = 0
numberOfApples = 2
while numberOfLoops < 10:
    numberOfApples *= 2
    numberOfApples += numberOfLoops
    numberOfLoops -= 1
print("Number of apples: " + str(numberOfApples))
```

infinite loop



3.

```
num = 10
while num > 3:
    num -= 1
    print(num)
```

9, 8, 7, 6, 5, 4, 3



4.

```
num = 10
while True:
```

```
if num < 7:
    print('Breaking out of loop')
    break
print(num)
num -= 1
print('Outside of loop')
```

**Note:** If the command `break` is executed within a loop, it halts evaluation of the loop at that point and passes control to the next expression. Test some `break` statements inside different loops if you don't understand this concept!

10, 9, 8, 7, Breaking out of loop, Outside of loop

✓

5.

```
num = 100
while not False:
    if num < 0:
        break
print('num is: ' + str(num))
```

infinite loop

✓

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Exercise 4

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?	<a href="#">Code in question 2</a> I don't quite understand what is meant by the code given in question 2. Can someone explain what the code means?	3
?	<a href="#">spoiler ques 5</a> num = 100 while not False: if num < 0: break print('num is: ' + str(num)) THIS WILL NOT PRODUCE INFINITE LOOP AS IT IS (NOT FAL...	5
?	<a href="#">Why the example does not print the number 3?</a> The Python code is: *num = 5 if num > 2: print(num) num -= 1 print(num)* So, 1. num starts with 5, evaluates; 5 > 2: True, prints 5 an...	2
💬	<a href="#">Why is 7 included in Q4?</a> Hi - Can someone explain why 7 is included in the answer in Q4? My assumption would have been that because it is NOT less than 7,...	4
•	What are the conditions of the while loops in question 4 & 5?	

< Previous

Next >

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