

CS150 L08: While loops - solution

1. What is the output of this code (what is printed)?

```
n = 3
while n > 0:
    if (n == 5):
        n = -99
    print(n)
    n = n + 1
```

A 3
4

B 3
4
5

C 3
4
-99

D 3
4
5
-99

E I don't know

Answer: C

When this code runs, n takes on the values 3, 4, 5 (which triggers if statement), -99, -98 (which exits loop)

so this code will print

3
4
-99

2. A valid password is one that is length 5 and starts with "xy". A valid password should terminate the loop. Which of these implements that specification?

The input function reads a string typed by the user, that is it prints its argument as a prompt and returns whatever the user types as a string (after the user hits enter).

A while True:
 s = input ("Enter a password: ")
 if len(s) == 5 and s[:2] == 'xy':
 break

Answer: A

In answer A, the loop will continue *until* s satisfies the specifications. In answer B, the loop does the opposite, it continues *while* s meets the specification.

B s = input ("Enter a password: ")
while len(s) == 5 and s[:2] == 'xy':
 s = input ("Enter a password: ")

C Both A & B are correct

D Neither A or B are correct

E I dont' know

3. Will the following loop terminate, be guaranteed to be an infinite loop, or will it depend?

```
a = 0
i = 0
while i < 10:
    a = a + 1
```

- (A) Terminate or not execute
- (B) Infinite loop
- (C) Depends

Answer B.

This loop will be an infinite loop because the loop body does not change i, which remains < 10