

CS150 L03: For loops - solution

1. What will this code print?

```
sum=0
for i in range(10):
    sum = sum + 1
print(sum)
```

- (A) 9
- (B) 10
- (C) 45
- (D) 55
- (E) I don't know

Answer: B

The loop will have 10 iterations, and each iteration will increment sum by 1 for a total of 10

2. What will this code print?

```
sum = 0
for i in range(10):
    sum = sum + i
print(sum)
```

- (A) 9
- (B) 10
- (C) 45
- (D) 55
- (E) I don't know.

Answer: C

The loop will have 10 iterations, and each iteration will increment sum by the current value of loop variable i, that is, by the values in the sequence generated by range(10), i.e., $sum = 0 + 1 + 2 + 3 + \dots + 9 = 45$

3. What will this code print?

```
sum = 0
for i in range(5):
    for j in range(5):
        sum = sum + i
print(sum)
```

- (A) 10
- (B) 50
- (C) 225
- (D) 500
- (E) I dont' know

Answer: B

Each iteration of the outer loop performs 5 iterations of the inner loop. Thus the computation performed is

sum =

$0 + 0 + 0 + 0 + 0 +$
 $1 + 1 + 1 + 1 + 1 +$
 $2 + 2 + 2 + 2 + 2 +$
 $3 + 3 + 3 + 3 + 3 +$
 $4 + 4 + 4 + 4 + 4 = 50$