

CS150 L02: Functions - solution

1. Which of the following does not contain a function call?

- (A) `type(4.5)`
- (B) `area(2,9)`
- (C) `def add_one(x):`
`return x+1`
- (D) `print("Hello")`
- (E) None of the above, all contain function calls
- (F) I don't know

Answer: C
This is a function definition, not a call;
the others are all function calls.

2. What is the output of this code?

```
w = 0
```

```
def calculate(w, x, y):  
    a = x  
    b = w + 1  
    return a + b + 3
```

```
calculate(3, 2, 0)
```

- (A) 3
- (B) 5
- (C) 6
- (D) 9
- (E) I don't know

Answer: D
When `calculate` is invoked `w, x, y` are assigned 3, 2, 0 respectively. In the function body, `a` and `b` are assigned 2 and 4 respectively. Thus the return value is $2 + 4 + 3 = 9$.

3. What are the bugs in the following code?

```
def add_one(x):  
    return x + 1
```

```
x = 2  
x = x + add_one(x)
```

- (A) No bugs.
- (B) The function body is not indented
- (C) We are using x as a parameter and a variable, but we are not allowed to do that
- (D) Both B and C are bugs
- (E) I don't know

Answer: B

Function bodies must be consistently indented.
Recall function parameters are only defined within the function body and can have the same name as other variables elsewhere in the program.