

Name: _____ Lecture time: _____ Lab time: _____

CS21 Lab 10 Written Part – Due: in class Fri, April 14, 2023

QUESTION 1

```
1 def f(x, y):
2     if (x == 0):
3         # draw stack at this point
4         return 0
5     else:
6         return y + f(x-1, y)
7
8 def main():
9     z = f(6, 4)
10    print(z)
11
12 main()
```

DRAW STACK HERE

1. To the right of the program code (in the area beneath DRAW STACK HERE), draw the stack as it appears when the program reaches line 3.
2. What is the base case of the function `f`?
3. What is the recursive case of the function `f`?
4. Below, give the output that would be produced by running the entire program:

QUESTION 2

```
1 def g(lst):
2     s = len(lst)
3     if (s > 0):
4         print(lst[s-1])
5         g(lst[:-1])
6     else:
7         # draw stack at this point
8         print("Done!")
9
10 def main():
11     numbers = [4, 10, 29, 31]
12     g(numbers)
13
14 main()
```

DRAW STACK HERE

1. To the right of the program code (in the area beneath DRAW STACK HERE), draw the stack as it appears when the program reaches line 7.
2. What is the base case of the function `g`?
3. What is the recursive case of the function `g`?
4. Below, give the output that would be produced by running the entire program: