

Quiz: Recursion (2)

Total Score: $/2^3$

Printed Name:

Quiz rules:

1. You MAY use any printed or handwritten notes.
2. You MAY NOT use a computer or any other electronic device.

Problem 1. Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
1 $ cd; rm -rf quiz; mkdir quiz; cd quiz
2 $ cat >foo.py <<EOF
3 def foo(xs):
4     if len(xs) > 10:
5         return 2
6     xs.append(1)
7     return 2 * foo(xs)
8 try:
9     print('foo([1, 2, 3, 4])=',foo([1, 2, 3, 4]))
10 except RuntimeError:
11     print('StackOverflow')
12 $ python3 foo.py
```

Problem 2. Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
1 $ cd; rm -rf quiz; mkdir quiz; cd quiz
2 $ cat > foo.py <<EOF
3 def foo(xs):
4     if len(xs) < 0:
5         return 0
6     ret = foo(xs[1:])
7     return 1 + ret
8 try:
9     print('foo([1, 2, 3, 4, 5])=', foo([1, 2, 3, 4, 5]))
10 except RuntimeError:
11     print('StackOverflow')
12 EOF
13 $ python3 foo.py
```

Problem 3. Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
1 $ cd; rm -rf quiz; mkdir quiz; cd quiz
2 $ cat > foo.py <<EOF
3 def foo(xs):
4     def go(i, acc):
5         if len(xs) <= i:
6             return acc
7         acc *= xs[i]
8         acc -= 1
9         return go(i+2, acc)
10    return go(1, 2)
11 try:
12     print('foo([1, 2, 3, 4, 5])=', foo([1, 2, 3, 4, 5]))
13 except RuntimeError:
14     print('StackOverflow')
15 EOF
16 $ python3 foo.py
```

Problem 4. Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
1 $ cd; rm -rf quiz; mkdir quiz; cd quiz
2 $ cat > foo.py <<EOF
3 def foo(xs):
4     if len(xs) == 0:
5         return 0
6     ret = xs[0]
7     ret -= foo(xs[2:])
8     ret += foo(xs[1:])
9     return ret
10 try:
11     print('foo([1, 2, 3, 4, 5])=', foo([1, 2, 3, 4, 5]))
12 except RuntimeError:
13     print('StackOverflow')
14 EOF
15 $ python3 foo.py
```