

UNOFFICIAL QUIZ *for* PRACTICE

## QUIZ 4

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**This quiz will not count towards your grade.** It exists to simply gauge your understanding. You will have 5 minutes to complete this quiz. In that timespan, your goal is to complete one question and at least attempt the other two.

**01. TREE RECURSION**

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Fill in the code below. You may not edit existing code.

```
def stairs(n):
    """ You may choose to walk 1 or 2 steps at a time.
    Write a function that returns the number of ways to walk
    up n steps.

    >>> stairs(1)
    1
    >>> stairs(3)
    3
    >>> stairs(5)
    8
    """
```

UNOFFICIAL QUIZ *for* PRACTICE**02. LIST COMPREHENSIONS**

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Complete all of the following functions in one line.

```
def doubley(lst):
    """ Doubles all elements in a list
    >>> doubley(['a', 2, []])
    ['aa', 4, []]
    """
    return _____
```

```
def refreshing(transformer, lst):
    """
    >>> square = lambda x: x*x
    >>> refreshing(square, range(0, 3))
    [0, 1, 4]
    >>> silly = lambda x: 3x+1
    >>> refreshing(silly, range(0, 3))
    [1, 4, 7, 10, 13]
    """
    return _____
```

```
def one_at_a_time(n, k):
    """ Takes two parameters and generates ranges
    of length n from 0 to k.

    >>> one_at_a_time(1, 5)
    [0, 1, 2, 3, 4]
    >>> one_at_a_time(2, 3)
    [0, 1, 2, 1, 2, 3]
    >>> one_at_a_time(4, 2)
    [0, 1, 1, 2, 2, 3, 3, 4]
    """
    return [_____ for _____ in _____ for _____ in _____]
```