1. **(4 points)   As a function of** `n`

   Identify the order of growth of the runtime as a function of `n`.

```
def f0(n):
    while n > 0:
        print('print(print(None)))')
        n -= 1
```

$O(n)$.

```
def f1(n):
    while n > 0:
        print('make')
        n -= 2
```

$O(n)$.

```
def f2(n):
    while n > 0:
        print('lemonade')
        n //= 2
```

$O(\log n)$.

2. (6 points)   *All* of the paths

Write a function `all_paths` that takes in a `Tree` and returns a list of paths from the root to leaves. Each path should be represented as a list.

```
def all_paths(tree):
    if tree.is_leaf():
        return [[tree.label]]
    result = []
    for branch in tree.branches:
        result += [[tree.label] + path for path in all_paths(branch)]
    return result
```