**Problem 3**

* According to the definition of big O, a function, f(n) is in O(g(n)) if there exists positive real number c and a real number k such that for all n > k, 0 < f(n) < c∙g(n)

Applying this to our problem.

2n+1 ≤ c∙ 2n

2n x 2 ≤ c∙ 2n

So, it appears that, for c ≥ 2,

c∙ 2n will always be ≥ 2n+1

Hence, for c ≥ 2, 2n+1 is in O(2n)