CS62: Spring 2025 | Lecture #7 (Algorithmic Analysis) worksheet | Jingyi Li

1. Simplify the following quantities using Big O notion:

a. $n + 1$

b. $1 + \frac{1}{n}$

c. $(1 + \frac{1}{n})(1 + \frac{2}{n})$

d. $2n^3 - 15n^2 + n$

e. $\frac{\log(2n)}{\log(n)}$

f. $\frac{\log(n^2 + 1)}{\log(n)}$

2. Give the order of growth (worst case) of the running time for the following code fragment:

```
int sum = 0;
for (int k=n; k>0; k/=2){
    for (int i=0; i<k; i++){
        sum++;
    }
}
```