Tutorial 01 - Asymptotic Analysis
CS 240E Winter 2022
University of Waterloo
Monday, January 10, 2022

1. **Little Omega:**
   Prove from first principles that $n \in \omega\left(2^{\sqrt{\log n}}\right)$

2. **Loop Analysis:**
   Analyse the following piece of pseudocode and give a tight (Θ) bound on the running time as a function of n.

```
k := 1
for i from 1 to n:
    j := 0
    while j <= n:
        j := j + k
    k := k * 2
```