

CSE 332: Data Abstractions

QuickCheck: Asymptotics Solutions (due Thursday, June 25)

0. \mathcal{O} My God!

Recall the definition of $f \in \Omega(g)$ is as follows:

$$\exists(c, n_0 > 0). \forall(n \geq n_0). f(n) \geq cg(n)$$

Prove that $4n^2 + n^5 \in \Omega(n)$.

Solution:

Choose $c = \frac{1}{500}$ and $n_0 = 1$.

Then, since $n \geq 1$, $4n^2 + n^5 \geq \frac{4n}{500} + \frac{n}{500} = \frac{n}{100}$.