

Big-O, see Rosen page 205

Let $f : \mathbb{N} \rightarrow \mathbb{R}$ and $g : \mathbb{N} \rightarrow \mathbb{R}$ be two functions.

We will say that f is “Big-O” of g if $\exists C > 0$ and $k \geq 0$ such that $|f(n)| \leq C|g(n)|$ for all $n > k$.

We write this as $f(n)$ is $O(g(n))$.

Note that this is just expressing that $g(n)$ is an *upper bound* for $f(n)$.

The bound need not be tight.

But also, we don't require that $f(n) \leq Cg(n)$ for all $n...$ only for sufficiently large n .