[Big Oh and Little Oh]

(def) Given two sequences $\{a_n\}$ and $\{b_n\}$ such that $b_n\geq 0$ for all n. We write

$$a_n = O(b_n)$$

if there exists a constant $M\!>0$ such that $|a_n|\leq Mb_n$ for all n.

We write

$$a_n = o(b_n)$$
 as $n \to \infty$

 $\text{if } \lim_{n \to \infty} \frac{a_n}{b_n} = 0$