

Theorem: Limit of a Sequence

Let L be a real number. Let f be a function of a real variable such that

$$\lim_{x \rightarrow \infty} f(x) = L$$

If (a_n) is a sequence such that $f(n) = a_n$ for every positive integer n , then

$$\lim_{n \rightarrow \infty} a_n = L$$