

Definition A sequence x_0, x_1, x_2, \dots of real numbers has a *limit* a if and only if for every real number $\epsilon > 0$ there exists an integer N such that $|x_n - a| < \epsilon$ whenever $n > N$.

Definition A sequence of real numbers is *convergent* if it has a limit.

Definition A sequence of real numbers is *divergent* if it is not convergent.