Definition. Given two metric spaces $\langle X, d_X \rangle$, $\langle Y, d_Y \rangle$, a function $f : X \to Y$ is *Lipschitz* if there exists a $K > 0$ such that

$$d_Y(f(x), f(y)) \leq K d_X(x, y), \quad \forall x \in X, y \in Y.$$