Definition 8.vii.3. [2B9]*Let (X, τ) and (Y, σ) be two topological spaces, with (Y, σ) Hausdorff; let $f : X \to Y$ be a function.*
It is said that f is ***continuous in*** *x_0 if $\lim_{x \to x_0} f(x) = f(x_0)$.*
It is said that f is ***continuous*** *if (equivalently)*

- *if f is continuous at every point, that is $\lim_{x \to y} f(x) = f(y)$ for every $y \in X$, or*
- *if $f^{-1}(A) \in \tau$ for each $A \in \sigma$.*

*(Thm. 5.7.4 in the notes [**?**].).*
A continuous bijective function $f : X \to Y$ such that the inverse function $f^{-1} : Y \to X$ is again continuous, is called ***homeomorphism****.*