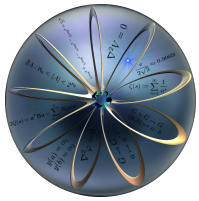

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homotopy of maps

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Defines	homotopic
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Let X, Y be topological spaces, A a closed subspace of X and $f, g : X \to Y$ continuous maps. A *homotopy of maps* is a continuous function $F : X \times [0,1] \to Y$ satisfying

1. $F(x,0) = f(x)$ for all $x \in X$
2. $F(x,1) = g(x)$ for all $x \in X$
3. $F(x,t) = f(x) = g(x)$ for all $x \in A, t \in [0,1]$.

We say that f is homotopic to g relative to A and denote this by $f \simeq g \; rel A$. If $A = \emptyset$, this can be written $f \simeq g$. If g is the constant map (i.e. $g(x) = y$ for all $x \in X$), then we say that f is *nullhomotopic*.