

Name:

Warm-up #12

Let $u : T \rightarrow X$, let E be a subset of X , and let $g : E \rightarrow Y$. Let t_0 be a limit point of T , and set $x_0 = u(t_0)$. Suppose

- (a) x_0 is a limit point of E
- (b) $\lim_{x \rightarrow x_0} g(x)$ exists
- (c) u is continuous
- (d) u is injective.

Show that

$$\lim_{t \rightarrow t_0} g(u(t)) = \lim_{x \rightarrow x_0} g(x).$$