It was shown in problem set 1 that for any linear transformation $T : \mathbb{R}^n \to \mathbb{R}^m$, there exists a number M such that $|T(h)| \leq M|h|$ for all $h \in \mathbb{R}^n$.

Now, $\forall \epsilon > 0 \forall x \in \mathbb{R}^n$, choose $\delta = \dfrac{\epsilon}{M}$. $|x - a| < \delta \implies |T(x) - T(a)| = |T(x - a)| \leq M|x - a| < M\delta = \epsilon$. Thus, T is continuous on $\mathbb{R}^n$.