Q6: Suppose that $x_n \to x$, and $Tx_n \to y$. Since $f \circ T$ is continuous, we have that $f(Tx_n) \to f(Tx)$. We also know that $f(Tx_n) \to f(y)$. Therefore $f(y) = f(Tx)$. Since continuous linear functions seperate points, we have that $Tx = y$. Thus by the closed graph theorem, T is bounded.