MA 565 Homework 6
Due Friday, October 9

Axler Chapter 3E # 12
Axler Chapter 3F # 5, 6, 16, 34

1. Let $T : V \to W$, $S : U \to V$ be linear maps, and suppose that $T \circ S = 0$. Show that T factors uniquely through the cokernel of S. That is, there exists a unique map $T' : \text{coker}(S) \to W$ such that $T = T' \circ \pi$, where $\pi : V \to \text{coker}(S)$ is the canonical quotient map.