Homework # 3

Hand-in: Due Tuesday, Sept. 29.

Let $V = \mathbb{R}^2$, let β be the standard basis of V, and let L be the line y = mx for m a non-zero real number.

- 1. Let T be the reflection of V across the line L. Find a basis γ for V in which $[T]_{\gamma}$ is diagonal. Then find $[T]_{\beta}$.
- 2. Let T be the projection of V onto the line L. Find a basis γ for V in which $[T]_{\gamma}$ is diagonal. Then find $[T]_{\beta}$.

Additional HW

Sec. 2.4 - 1, 3, 6, 14, 16, 22 Sec. 2.5 - 1, 2, 5, 6a,b,c, 9, 10