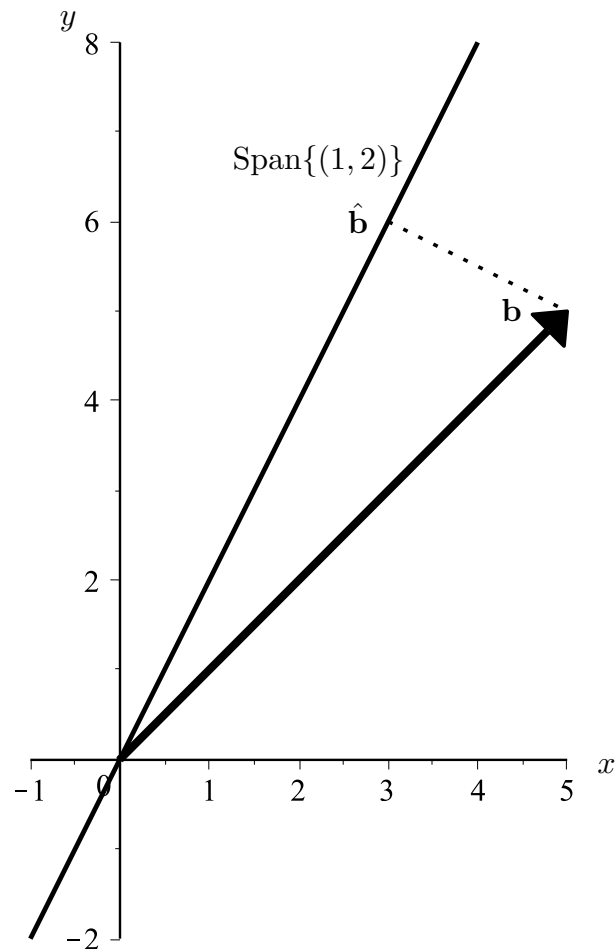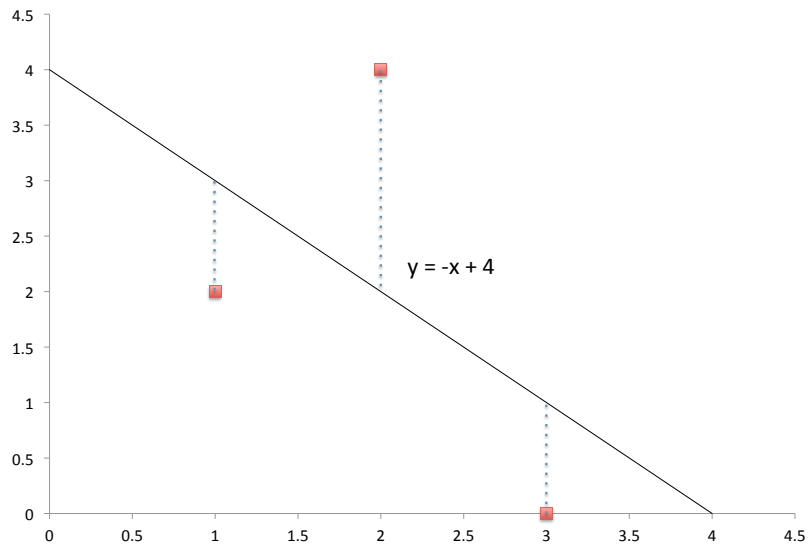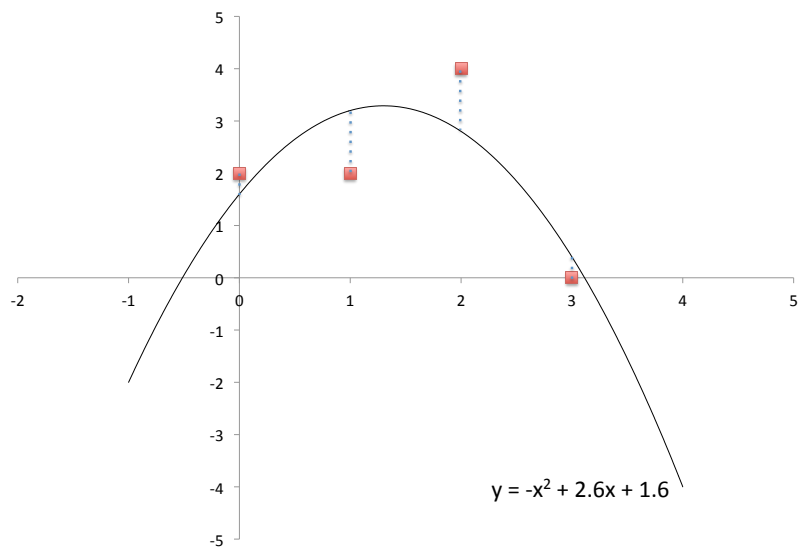# Orthogonal Projections and Least Squares

We derived in class that the projection of $\mathbf{b}^T = (5, 5)$ onto the span of $(1, 2)$ was given by $\hat{\mathbf{b}}^T = (3.6)$. This is shown in the diagram.

Curve fitting for line. Distance minimized is sum of squares of lengths of dotted lines.

Curve fitting for quadratic. Distance minimized is sum of squares of lengths of dotted lines.