

# Assignment 12 (2/6)

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Note that  $\text{Proj}_{\vec{b}} \vec{a} = \frac{\vec{a} \cdot \vec{b}}{\|\vec{b}\|^2} \vec{b} = \frac{\vec{a} \cdot \vec{b}}{\|\vec{b}\|} \vec{u}_b = (\vec{a} \cdot \vec{u}_b) \vec{u}_b$ .

The  $\vec{b}$ -component of  $\vec{a}$  is defined to be  $\vec{a} \cdot \vec{u}_b$ , so that

$$\text{Proj}_{\vec{b}} \vec{a} = (\text{Comp}_{\vec{b}} \vec{a}) \vec{u}_b$$

## Problem 1

Problems 13.3.(5, 6, 11, 15, 30, 39, 40, 45, 49, 53).