

Let  $\vec{d} = \begin{bmatrix} 3 \\ 3 \end{bmatrix}$  and  $\vec{u} = \begin{bmatrix} 1 \\ 2 \end{bmatrix}$ .

- 33.1 Draw  $\vec{d}$ ,  $\vec{u}$ ,  $\text{span}\{\vec{d}\}$ , and  $\text{proj}_{\text{span}\{\vec{d}\}} \vec{u}$  in the same picture.
- 33.2 How do  $\text{proj}_{\text{span}\{\vec{d}\}} \vec{u}$  and  $\text{vcomp}_{\vec{d}} \vec{u}$  relate?
- 33.3 Compute  $\text{proj}_{\text{span}\{\vec{d}\}} \vec{u}$  and  $\text{vcomp}_{\vec{d}} \vec{u}$ .
- 33.4 Compute  $\text{vcomp}_{-\vec{d}} \vec{u}$ . Is this the same as or different from  $\text{vcomp}_{\vec{d}} \vec{u}$ ? Explain.

