

## Homework - July 23

### Section 6.1

4. If  $\mathbf{u} = \begin{bmatrix} 1 \\ 2 \end{bmatrix}$ , then  $\frac{1}{\mathbf{u} \cdot \mathbf{u}} \mathbf{u} = \frac{1}{1+4} \begin{bmatrix} 1 \\ 2 \end{bmatrix} = \begin{bmatrix} 1/5 \\ 2/5 \end{bmatrix}$ .
18.  $\mathbf{y} \cdot \mathbf{z} = -3 + -56 + 60 + 0 = 1 \neq 0$  therefore  $\mathbf{y}$  and  $\mathbf{z}$  are not orthogonal.