

## Homework #9

1. Section 3.1, page 133: #2f, 5, 11.
2. Section 3.1, page 136: #21ad.
3. Section 3.2, page 139: #4c (The problem asks you to use the inner product given by equation 3.9, on page 132. Explain why this inner product can also be written as  $\langle v, w \rangle = v^T \begin{pmatrix} 1 & -1 \\ -1 & 4 \end{pmatrix} w$ . In the future, we will write some of our inner products in the form  $\langle v, w \rangle = v^T K w$ , where  $K$  is an  $(n \times n)$  matrix.)
4. Section 3.2, page 141: #18, 24 (Draw a picture for #24. It will help you visualize the vectors.

Extra credit problems: 3.1.13, 3.1.19, 3.1.23, 3.1.24, 3.2.21, 3.2.36, 3.2.41.