Fall, 2011

MATH 3500(H)

T. Shifrin

PROBLEM SET #9–10

DUE Wednesday, October 26, 2011.

Problems to work but not hand in:

§4.1: #6a, 10, 14, 18a,b,e.

§4.2: #1, 2c,e, 3b.

§4.3: #2, 12, 14b.

Problems to turn in:

WeBWork Homework 9 (due Sunday, October 16, 11 pm; to be covered on the exam)

WeBWork Homework 10 (due Saturday, October 22, 11 pm)

§4.1: #13* (3), 15 (3), 17 (3), 19 (3), 23 (3).

§4.2: #7 (3), 9 (4).

> **A.** (3) Suppose $\{\mathbf{u}, \mathbf{v}, \mathbf{w}\} \subset \mathbb{R}^n$ is a linearly independent set of vectors. Prove that $\{\mathbf{u} - \mathbf{v}, \mathbf{u} + 2\mathbf{v} + \mathbf{w}, \mathbf{u} + \mathbf{v} + \mathbf{w}\}$ is linearly independent as well.

§4.3: #4 (3), 5 and 16 (3), 9 (3), 11† (3).

Challenge problems (Turn in separately):

§4.3: #22 (3), 25 (4), 26 (3), 27 (5).

*Add the condition $\mathbf{b} \neq \mathbf{0}$ in part b and the condition $\mathbf{b}_1, \mathbf{b}_2 \neq \mathbf{0}$ in part d.

†#9 and #11 are extremely important.