UH - Math 4377/6308 - Dr. Heier - Fall 2012
HW 6
Due 10/10, at the beginning of class.

Use regular sheets of paper, stapled together.
Don't forget to write your name on page 1.

1. (1 point) Section 2.1, Problem 3

2. (1 point) Let $T : \mathbb{R}^5 \to \mathbb{R}^3$, $T(a_1, a_2, a_3, a_4, a_5) = (a_1+2a_2-a_3, -a_2+3a_3, -a_1-a_2-2a_3)$. Find bases for the kernel and range of T.

3. (0.5 points) Section 2.1, Problem 10

4. (0.5 points) Section 2.1, Problem 11

5. (1 point) Section 2.1, Problem 13

6. (1 point) Section 2.1, Problem 14

7. (1 point) Section 2.1, Problem 17

8. (1 point) Section 2.2, Problem 3

9. (1 point) Section 2.2, Problem 5(a)

10. (1 point) Let $T_1 : \mathbb{R}^2 \to \mathbb{R}^2$, $T_1(a_1, a_2) = (a_1 + a_2, a_1 - a_2)$. Let $\beta = \{(1, 0), (0, 1)\}$ and $\gamma = \{(1, 2), (1, 1)\}$. Compute $[T]_\beta^\gamma$.

11. (1 point) Let $T_2 : \mathbb{R}^2 \to \mathbb{R}^2$, $T_2(a_1, a_2) = (2a_1+4a_2, -a_1-a_2)$. Let $\beta = \{(1, 2), (-1, 1)\}$ and $\gamma = \{(2, 1), (2, 0)\}$. Compute $[T]_\beta^\gamma$.

12. (1 extra credit point) Section 2.1, Problem 37