Honors Linear Algebra (Spring 2011) — Homework 6

- DL-LAA stands for the text (David Lay – Linear Algebra and its Applications).
- Problems marked with **[M]** involve the use of MATLAB. You must submit the commands you use as well as all output from MATLAB as part of the answer to such a problem.

  You are welcome to email me these commands and output files. If you do email me, name the file(s) using your first and last names. For instance, if you are Eric Cartman and are sending me a text file, you could name it something like `MatlabHw6_Eric_Cartman.txt`.
- The points for each problem is given in parentheses. The total points add up to 70. You will be graded for 65 points, with the possibility of getting up to 5 points as extra credit.
- **This homework is due in class on Thursday, February 24**.

1. (8) DL-LAA Problem 12 from page 90.
2. (10) Find the matrix of the linear transformation $T : \mathbb{R}^4 \to \mathbb{R}^2$ that first projects points in $\mathbb{R}^4$ to $\mathbb{R}^2$ by ignoring the 3rd and 4th coordinates, and then rotates the vectors thus obtained in $\mathbb{R}^2$ by 45° counterclockwise.
3. (12) DL-LAA Problem 22 from page 91.
4. (12) `TRUE/FALSE`: DL-LAA Problem 23 **c.**, Problem 24 **b.**, **c.**, **d.** from page 91.
5. (6) DL-LAA Problem 27 from page 91.
6. (6) DL-LAA Problem 28 from page 91.
7. (16) **[M]** DL-LAA Problem 12 from Page 101.