# 18.06 Spring 2013 – Problem Set 2

This problem set is due Thursday, February 21st, 2013 at 4pm (hand in to Room 2-255). The textbook problems are out of the 4th edition. A correct answer will only earn you half of the available points. The other half of the points come from your explanation.

Note: Your recitation instructor is responsible for allowing late homework submissions, as well as the re-grading of your PSet. If there is any problem with your PSet, contact your recitation instructor!

1. (8 pts) Do Problem 13 from Section 2.6.

2. (8 pts) Do Problem 24 from Section 2.6.

3. (8 pts) Do Problem 3 from Section 2.7.

4. (8 pts) Do Problem 40 from Section 2.7.

5. (8 pts) Do Problem 5 & Problem 10 from Section 3.1.

6. (8 pts) Do Problem 15 & Problem 20 from Section 3.1.

7. (8 pts) Do Problem 23 from Section 3.1.

8. (8 pts) Do Problem 24 from Section 3.1.

9. (18 pts) How many $4 \times 4$ permutation matrices are symmetric? List all such matrices. (Note: just listing these matrices will not be enough for full points – you should explain why the matrices you have listed is all of the $4 \times 4$ permutation matrices!)

10. (18 pts) Find a symmetric matrix whose column space is the set

$$\{v \in \mathbf{R}^3 \mid v \text{ is a multiple of the vector } (1, 2, 4)\}.$$