Math 215 HW #3

Due 5:00 PM Thursday, February 11

Reading: Sections 1.6–1.7 from Strang's *Linear Algebra and its Applications*, 4th edition.

Problems: Please follow the guidelines for collaboration detailed in the course syllabus.

1. Problem 1.6.6.
2. Problem 1.6.8.
3. Problem 1.6.14.
4. Problem 1.6.18.
5. Problem 1.6.26.
6. Problem 1.6.38.
7. Problem 1.6.40.
8. Problem 1.6.52. For the first part, find some *non-zero* matrix A such that $A^2 = 0$. For the second part, you should prove that $A^T A \neq 0$ whenever $A \neq 0$.
9. Problem 1.7.4. Be sure to read the first example from this section carefully.