

**Mathematics 1350H – Linear algebra I: Matrix algebra**  
TRENT UNIVERSITY, Summer 2013

**Assignment #6**

*Due on Friday, 21 June, 2013, NO LATER THAN 3 P.M.*

**Least squares approximation**

Linear algebra has major applications in statistics, only starting with the topic of this assignment, least squares approximation. Please read Section 7.3 in the textbook and use the material therein to answer the following questions. Show all your work!

1. Find the least squares approximating line for the points  $(1, 10)$ ,  $(2, 8)$ ,  $(3, 5)$ ,  $(4, 3)$ , and  $(5, 0)$ , and compute the corresponding least squares error. [5]
2. Find the least squares approximating parabola for the points  $(1, 8)$ ,  $(2, 7)$ ,  $(3, 5)$ , and  $(4, 2)$ . [5]