Due: upload to Gradescope by Friday 6 December 2019 at 3pm.
Reading: Chapter 7.1–7.3 and 8.1 from the textbook.

Grading: 1 point per exercise for completeness. The exercises marked with a ($\star$) will also be graded for correctness, and will be assigned an additional 3 points each.

Submit your written solutions to the following questions from the textbook:

Chapter 7.1:
Ex. 1
Ex. 2
Ex. 4
Ex. 16
Ex. 17
Ex. 18
Ex. 37($\star$)

Chapter 7.2
Ex. 1
Ex. 13
Ex. 16($\star$)

Chapter 7.3
Ex. 1
Ex. 4
Ex. 12 ($\star$)
Ex. 47

Chapter 8.1
Ex. 1
Ex. 8($\star$)
Ex. 12

Submit your written solution to the following exercise:

Q1: Let V be a subspace of $\mathbb{R}^n$ and let $T : \mathbb{R}^n \to \mathbb{R}^n$ be the orthogonal projection onto V. Use geometric arguments to find all eigenvectors and eigenvalues of T. Is T diagonalisable?