Exam 3 Outline

The exam will cover all or parts of sections 4.4 and 5.1-5.3. As before, you’ll be given a choice of problems over a mix of calculation and theory. Here are the topics, along the theorems you might be asked to prove:


5.1 Orthogonal sets in \( \mathbb{R}^n \). Orthogonal and orthonormal bases. Orthogonal matrices. Theorems 5.1-5.8.

5.2 The orthogonal complement \( W^\perp \) of a subspace \( W \). The orthogonal projection. Theorem 5.9, parts (a), (c) and (d). Theorem 5.11. (The Orthogonal Decomposition Theorem.)

5.3 The Gram-Schmidt procedure.