

## Announcements for Final Exam

**When:** The final exam will be **Tuesday, December 11, 8:00-11:00**, in **Boelter 2444**.

**Conditions:**

180 minutes long, 120 points (more time per problem than the midterms)

Closed book.

Calculators permitted, except for those that do linear algebra, but the intention is that any arithmetic will be fairly simple.

The format will be like the midterms, but with eight or nine 10-point problems and the rest briefer-answer.

**Coverage:**

All lectures, all homework, all handouts. The exam will be cumulative but will include thorough coverage of the material since just before the second midterm (Assignment #7 on.)

Reading from relevant sections of the text, but nothing that has not been mentioned in homework, handouts, or lectures.

Proofs to know (in addition to homework solutions)

- “Exchange” proof of invariance of dimension
- $\dim \text{Nullspace } T + \dim \text{Range } T = \dim \text{domain } T$ .
- Eigenvectors for distinct eigenvalues are linearly independent (by formal induction).
- The proof of the spectral theorem, to the extent we have covered it, including any lemmas.
- The proof of Cayley’s Theorem, if we have covered it.
- Proof that permutations are partitioned into even or odd, if we have covered it.

**Review:**

In class as part of lecture on Friday, December 7.