Final Exam Review Topics:

1. Row Reduction
2. LU/LDU factorization
3. Properties of determinants: multiplications, inverse, factoring, …
4. Finding determinants using the cofactor expansion
5. Finding the inverse of a matrix using the cofactors matrix
6. Finding the inverse of a 2 by 2 matrix
7. Eigenvalue and eigenvectors
8. Diagonalization
9. Solving a difference equation and power A^k
   1. General solution u\_k = with c’s lambda’s and eigenvectors
   2. Solution of an initial value problem u\_k = S Lambda^k S^-1
10. Solving a differential equation
    1. General solution u(t) =with c’s e^lambda’s and eigenvectors
    2. Solution of an initial value problem using S e^.. and S^-1

Section 5.5.

1. Complex numbers and properties
2. n dimensional complex vector space.
3. Hermitian and Unitary matrices and properties

Pay attention to facts/properties with short proofs.