The final will consist of filling in definitions, completing the statements of certain theorems, and being able
to prove certain theorems and exercises. Due to various constraints, the final will focus more on definitions
and statements of theorems, rather than proving theorems and exercises. The pools for each of these is as
follows.

Definitions to know:

- vector space
- subspace
- sum of subspaces
- direct sum of subspaces
- linear combination
- span
- linearly independent
- linearly dependent
- finite dimensional vector space
- infinite dimensional vector space
- basis
- dimension of a finite dimensional vector space
- linear map, linear operator
- sum, scalar multiplication, and product of linear maps
- null space, range
- injective, surjective
- matrix of a linear map, matrix of a vector
- sum, scalar multiplication, and product of matrices
- invertible linear map, isomorphism, isomorphic
- invariant subspace
- eigenvalue, eigenvector
- inner product, inner product space
- norm
- orthogonal
- orthonormal
- orthogonal complement
- orthogonal projection
- adjoint
Be careful that you know the definitions of these terms, rather than just the criteria for checking certain terms.

Be able to complete the statements of the theorems from the text (see the text for the statements of these theorems): 1.34, 1.45, 2.23, 2.34, 2.35, 2.43, 3.5, 3.22, 3.23, 3.24, 3.56, 3.59, 3.61, 3.69, 5.6, 5.10, 6.7, 6.10, 6.13, 6.18, 6.26, 6.30, 6.31, 6.42, 6.46, 7.10, 7.14, 7.16, 7.24, 7.29

You will have two questions from Chapter 7. In answering these questions you may assume any of the theorems from Chapters 1, 2, 3, 5, and 6.

Be able to prove the theorems and exercises from the text (see the text for the statements): 7.5, 7.6, 7.13, 7.20, 7.A # 2