Review 2 Math 335

Any term in **bold face** know the definition well enough to state it on the test. The definition you give should be very similar to the one in the book or one with similar detail.

Section 2.8 **Subspace, Column space, null space, basis** , Be able to PROVE Theorem 12 .

Sample problems Example 7 Exercises 17,23

Section 2.9 **coordinate of x relative to β , dimension, rank, Rank Theorem, Basis Theorem** Be able to apply the invertible matrix thorem

Sample problems Example 1 Exercises 9,13,15

Section 4.1 Exercise 5-8

Section 5.1 **eigenvector, eigenvalue, eigenspace**, be able to apply Theorems 1-2

Sample problems Example 4 Exercises 15,25, 26

Section 5.2 **characteristic equation, similar , multiplicity** , be able to apply Theorem 3 be able to apply and prove Theorem 4

Sample problems Example 5, Exercises 3,5,7

Section 5.3 **diagonalizeable** ,be able to apply Theorems 5,6

Sample problems Example 3 Exercises 11,13, 15,17

Section 5.5 know complex eigenvalues occur in conjugate pairs for real matrices

Sample problems Example 2 Exercises 3

Section 5.6 **steady state vector** Given a system $A\mathbf{x}_k = \mathbf{x}_{k+1}$ with $\mathbf{x}_0$ represented as $\mathbf{x}_0 = c_1\lambda_1\mathbf{v}_1 +_1 \lambda_1\mathbf{v}_1$ determine what happens over time for different eigenvalues λ_i, and different eigenvectors $\mathbf{v}_i$, i.e. does $\mathbf{x}_k$ go to zero,steady state,...