

Review 3 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 6.1 **inner product, norm, orthogonal** , be able to apply Thm 1 **be able to prove Thm 2**

Sample problems Example 4 Exercises 5, 24, 27

Section 6.2 **orthogonal basis, orthonormal basis, orthogonal projection, component of y orthogonal to u , orthogonal matrix** , be able to apply Thm5, **be able to prove Thm 7**

Sample problems Examples 3,6 Exercises 11,17

Section 6.3 **orthogonal projection of y onto W** , be able to apply Thm 8 and **be able to prove Thm 9**

Sample problems Example 4 Exercises 9

Section 6.5 **least squares solution** , be able to apply Thm 13,14

Sample problems Example 1,2

Section 6.6 , **least squares line**, be able to set up and solve a regression problems

Sample problems Example 1,3

Section 7.1 **symmetric matrix, orthogonally diagonalizable**, **be able to prove Thm 1** apply Thm 3

Sample problems Example 3, 13 Exercises 27

Section 7.4 Singular Valued decomposition. singular values **Be able to prove Theorem 9 (just orthogonality of u), show singular values are ≥ 0**

Sample problems Example 3(compute u_i given σ_i and v_i) Exercises 3