

Homework Sets 32 – End

Friday Nov 9	5.3	5, 6, Supplemental Problems 11 and 12 (on previous HW list)
	5.4	4, 7, 9, 10.
Monday Nov 12	5.4	6, 8ab, 26 32a, 33. For 26, use $\ \mathbf{x} + \mathbf{y}\ ^2 = \ \mathbf{x}\ ^2 + 2\langle \mathbf{x}, \mathbf{y} \rangle + \ \mathbf{y}\ ^2$. 32a and 33a were done in class.
	5.5	1, 2, 3, 8, 9a, 9b(d), 15.
Weds. Nov 14	5.6	1a (recall that $R(A)$ is spanned by the column vectors), 2a, 3, 4, 8, and then 7 (finding a basis of the null space just means finding two LI vectors perpendicular to \mathbf{x}_1 and \mathbf{x}_2).
Friday Nov 16	5.5	No homework.
Monday Nov 19	Exam 3	Covers Sections 4.3 and 5.1 – 5.6.
Weds. Nov 21		No homework.
Monday Nov 26	6.1	Homework I on the <i>Eigenvalues</i> Handout.
Weds. Nov 28	6.3	Homework II on the <i>Eigenvalues</i> Handout.
Friday Nov 30	6.3	Homework III on the <i>Eigenvalues</i> Handout.
Monday Dec 3		Homework IV on the <i>Eigenvalues</i> Handout.
Weds. Dec 5		Review for Final Exam.
Friday Dec 7		Review for Final Exam.
Tues. Dec 11	Final Exam	12:45–2:45 pm in A120 Wells Hall. Covers entire course.

Supplemental Problem 13. Find the best least squares approximation to $f(x) = |x|$ on $[-\pi, \pi]$ by a trigonometric polynomial of degree at most 2, i.e. of the form

$$\frac{a_0}{2} + a_1 \cos x + b_1 \sin x + a_2 \cos 2x + b_2 \sin 2x.$$

This is the orthogonal projection onto the span of these 5 orthonormal functions.