Tentative list.

EML 5060 **Homework Set 2** **Fall 2006**

Page	HW	Class	Topic
23	1.42	1.41'	vectors of all types
24	1.49	1.48a	decomposing vectors
24	1.54	1.54'	Cartesian basis vectors
24	1.55b	1.55a	planes
24	1.56a	1.56b	lines
25	1.58	1.57	curved motion#[0]
25	1.59a	1.59b	tangent planes[7]
25	1.64b	1.64a	normal vectors
53	2.37ac	2.37b	elementary operations
53	2.38a	2.38b	elementary operations
53	2.40c	2.40d	elementary operations
54	2.53AC	2.53B	elementary operations[1]
54	2.54B	2.54A	elementary operations[1]
111	3.49	—	linearity
111	3.50	—	one unknown
111	3.51bc	3.51ad	square systems of equations#
111	3.53ab	3.53c	square systems of equations[2]
112	3.55b	3.54	rectangular systems
112	3.57bc	3.57a	bases[8]
113	3.62a	3.61b	rectangular systems
112	3.60b	3.60a	unforced systems
113	3.67AB	3.67C	inverse matrices[3]
164	4.89b	4.89a	linear dependence
165	4.99b	—	unforced systems*
165	4.104a	4.104b	rank
232	6.47b	6.47a	change of basis#
232	6.51	6.48	change of basis#
232	6.49	—	change of basis#
232	6.50a	—	change of basis*
233	6.56	—	change of basis (note that $B = A'$)
273	7.75a	7.21	orthogonalization
301	8.42a	8.41a	determinants[4a]
301	8.42a		determinants[4b]
336	9.46	9.47	eigenvalues and diagonalization#
336	9.48b	9.48c	eigenvalues and diagonalization
337	9.56b	9.56a	principal axes[5]
337	9.57b	—	principal axes[5,6]
337	9.58a	9.58b	quadratic forms#*
337	9.59a	—	quadratic forms

*: Recommended question. Not required if you know you can do it.
#: Make a graph.
[0] z-component is $2t\hat{k}$
[1] Use determinants.
[2] Answer for a may be wrong, depending on book.
[3] Use GE. Do not take any determinants
[4a] Use minors.
[4b] Use Gaussian elimination.

[5] Orthonormal matrix.

[6] The value of b_{21} in the first column is 2, not 4. Be careful not to make errors in the determinant. Since u and v are nonunique, find those that result from Gram-Schmidt orthogonalization of the basis of the null space.

[7] 21, not 20.

[8] answer for b may be wrong.