

LADE Homework Assignments from the book

no.	section	page	exercises	description
A1	3.1	119	1-11 odd, 17, 18	DE's:rank, slopes, equilibria, sketching
A2	3.2	124	5, 7, 13, 14	Separable DE's
A3	3.3	129	5, 7, 11, 19	Exact DE's
A4	3.4	135	1, 3, 11, 13, 18	Linear DE's & integrating factors
A5	3.6	151	1, 5, 9, 14 , 21	applications of DE's
A6	3.9	176	1, 3, 11	Euler, Taylor, & Runge-Kutta methods
A7	4.2	201	1, 5, 7, 11, 13, 15, 42	homogeneous w/ const coefficients
A8	4.3	211	3, 15, 18	non-homogeneous w/ const. coefficients
A9	4.5	228	4	applications: springs
A10	4.1	188	3, 7, 9, 18	linear D.E.'s (compare §2.3,2.4)
B1	1.2	26	1-19 odd, 26	matrix addition and multiplication
B2	1.1	15	1, 9, 17, 26	solving systems of linear equations
B3	1.3	36	1, 3, 9, 12	matrix inverses, row echelon form
B4	1.4	41	1-19 odd, 32	transpose, diagonal & upper triangular
B5	1.5	50	7, 9, 13, 16	determinants
"	1.6	57	15, 16	tricks with determinants
C1	2.1	73	6, 9, 11	def of vector space
"			\mathbb{Q}, S^1, \mathbb{R}^2, {polynomials}	which of these are Real vector spaces?
C2	2.2	81	1, 3, 15, 17, 20	what's a subspace? Spanning sets
C3	2.3	93	1, 3, 5, 7, 9, 18, 20	linear independence and bases
C4	2.4	104	7, 10, 20	sets of basis vectors
D1	5.1	243	1, 3, 5, 9, 20	def of linear transformations
"			deriv and integral	are these linear transformation on $C1(\mathbb{R})$?
D2	6.5	322	§4.2, 1, 5, 7, 11, 13, 15, 18	convert these to 1st order systems
D3	5.4	277	1, 3, 5, 7, 22	eigenvalues and eigenvectors
D4	6.1	301	1	systems of linear DE's
"	6.2	311	1, 3, 5, 7	diagonalizable case (cf §4.2)
D5	5.5	286	1, 3, 5, 7	diagonalizing matrices
"	5.6	291	2, 8	& transformations
D6	6.4	318	1, 5, 16	non-homogeneous case

The bold problems are weekly problems (which you should write up and turn in); the remainder are daily problems (which you should be ready to put on the board).