

Math 322 Linear (Matrix) Algebra and Its Applications Academic Year 2009-10

Algebra of matrices, the solutions of simultaneous linear equations, matrix factorizations, determinants, linear transformations, vector spaces over the reals, linear independence of vector space, eigenvectors, eigenvalues, characteristic equations, diagonalizations, Markov Chains, inner products, orthogonality, Gram-Schmidt process, and least-square problems.

Recommended Text:

Linear Algebra and Its Applications (3rd Edition)
by David C. Lay (Addison-Wesley).

Recommended Sections of Book:

Chapter 1 Sections 1.1 - 1.5, 1.7 - 1.9

Chapter 2 Sections 2.1 - 2.3, 2.5, 2.8, 2.9

Chapter 3 Sections 3.1, 3.2

Chapter 6 Sections 6.1 - 6.5

Chapter 5 Sections 5.1 - 5.3

Chapter 4 Sections 4.1 - 4.3, 4.5, 4.9

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Linear Algebra and Its Applications

3rd ed., David C. Lay (Addison-Wesley)

Possible Problem Assignments

- Section 1.1 (1,3,4,5,7,11,13,15,23,24,25)
1.2 (1,3,7,9,11,17,19,21,23,25,27)
1.3 (1,3,5,9,11,13,15,17,21,23,24)
1.4 (1,3,5,7,9,12,14,15,21,23,24,25)
1.5 (1,3,5,9,15,16,19,23,24,25,26)
1.7 (1,3,5,7,9,11,13,15,17,21,22)
1.8 (1,3,5,9,11,13,17,19,20,21,22,24,29)
1.9 (1,3,5,7,9,17,23,24,29,30,35)

2.1 (1,2,3,4,5,6,9,10,11,13,15,16,23,27,30)
2.2 (1,3,5,7,9,10,11,13,22,29,31,33)
2.3 (1,3,5,6,7,11,12,13,17,24,36,37)
2.5 (1,3,5,6,7,9,11,15,17,24)
2.8 (1,2,5,6,7,9,10,15,16,21,23,24,25,27)
2.9 (1,2,3,5,7,9,11,13,15,17,18,19)

3.1 (1,3,5,7,9,11,15,19,21,22,23,25,27)
3.2 (1,3,4,5,7,11,15,17,21,24,25,29,31,32)

5.1 (1,2,3,5,7,9,11,13,17,19,21,22,25,27)
5.2 (1,3,5,9,11,19,21,22,25)
5.3 (1,2,3,5,7,11,17,21,22,24,27,28)

6.1 (1-8,9,10,11,13,16,17,19,21,23,24,25,27,28)
6.2 (1,3,5,7-11,13,15,16,17-20,21,23,24,26,27,29,32,33)
6.3 (1,3,5,7,9,11,12,15,17,19,21,22,23)
6.4 (1-4,7,9,11,13,15,17,19,20)
6.5 (1-5,7,9,11,13,15,17,19)

4.1 (1,3,5,6,7,8,9,10,13,14,23,24,35,36)
4.2 (1,3,5,7,13,15,17,23,25,26,29,30,31,33,34,35)
4.3 (1,3,5,9,10,12,13,15,19,21,22,23,29,31,32,33)
4.4 (1,3,4,5,7,9,10,11,13,14,15,16,17,18,21,22,27,29)
4.5 (1,3,7,10,11,13,15,16,17,19,20,21,25,29)
4.9 (1,3,4,5,7,11)