

Math 2114 : Intro to Linear Algebra : Poole 4e			
	Sec.	Topic	Homework
Chapter 1 : 3 Lectures			
3 Lectures	1.1	The Geometry and Algebra of Vectors.	<u>Written Homework Section 1.1:</u> 1a, 1d, 12, 18, 19, 21, 22, 23e, 24e, and Larson, Section 4.1: 41, 44 <u>Online Homework Section 1.1:</u> 2, 3, 7, 9, 13, 15
	1.2	Length and Angle: The Dot Product.	<u>Written Homework Section 1.2:</u> 1,8,14,17, 24, 25, 30, 48, 55, 60, 61, 63, and Larson, Section 5.1: 75, 76, 83 <u>Online Homework Section 1.2:</u> 3, 5, 11, 13, 27, 49, 66
Chapter 2 : 8 Lectures			
8 Lectures	2.1	Introduction to Linear systems.	<u>Written Homework Section 2.1:</u> 2, 4, 6, 20, 25, 31, 34, 40a <u>Online Homework Section 2.1:</u> 11, 14, 15, 21, 24, 28
	2.2	Direct Methods for Solving Linear Systems.	<u>Written Homework Section 2.2:</u> 8, 12, 16, 19, 25, 26, 28, 29, 30, 41, 42, and Larson, Section 2.1: 40, 43, 44, 49, 50 <u>Online Homework Section 2.2:</u> 3, 14, 17, 23, 27, 33, Larson, Section 2.1: 37, 39, 45, 51
	2.3	Spanning Sets and Linear Independence.	<u>Written Homework Section 2.3:</u> 2, 4, 8, 10, 12, 14, 18, 19, 23, 24, 26, 28, 42a, 44, p134: 1 <u>Online Homework Section 2.3:</u> 1, 3, 7, 15, 17, 22, 30
Chapter 3 : 10 Lectures			
10 Lectures	3.1	Matrix Operations.	<u>Written Homework Section 3.1:</u> 2, 3, 7, 8, 13, 14, 16, 17, 18, 19, 20, 26, 29, 35, and Larson, Section 2.2: 27, 29 <u>Online Homework Section 3.1:</u> 4, 5, 9, 21, 23
	3.2	Matrix Algebra.	<u>Written Homework Section 3.2:</u> 4, 18e, 20, 22, 23, 26, and Larson, Section 2.2: 23, 25, 41, 45, 61, 69 <u>Online Homework Section 3.2:</u> 3, 5
	3.3	The Inverse of a Matrix.	<u>Written Homework Section 3.3:</u> 2, 4, 12, 21, 22, 42a, 43a, 52, 53, page 252: 1c, 8, 9, and Larson, Section 2.3: 19, 41a–c <u>Online Homework Section 3.3:</u> 1, 57
	3.5	Subspaces, Basis, Dimension, and Rank.	<u>Written Homework Section 3.5:</u> 3, 4, 6, 7, 12 (only $col(A)$), 16, 17, 19 (only $col(A)$ and $null(A)$), 27, 28, 34, 35, 37, 39, 42, 46, 51, 52 <u>Online Homework Section 3.5:</u> 11, 18, 29, 30, 36
	3.6	Introduction to Linear Transformations.	<u>Written Homework Section 3.6:</u> 5, 6, 8, 10, 13, 14, 20, 24, 33, 37, and Larson, Section 6.2: 48, 50–54, 60 (a)–(e) <u>Online Homework Section 3.6:</u> 2, 9, 12, 21, 32, 51

	Sec.	Topic	Homework
Chapter 4 : 7 Lectures			
7 Lectures	4.1	Introduction to Eigenvalues and Eigenvectors.	<u>Written Homework Section 4.1:</u> 4, 6, 8, 10, 23, 24, 35a, 37 <u>Online Homework Section 4.1:</u> 3, 6, 12, 14, 24
	4.2	Determinants.	<u>Written Homework Section 4.2:</u> 1, 8, 12, 27, 47–52, 53, 54, and Larson, Section 3.3: 18
	4.3	Eigenvalues and Eigenvectors of $n \times n$ Matrices.	<u>Written Homework Section 4.3:</u> 2, 4, 7, 8, 10, 15, 16, 22, 23 <u>Online Homework Section 4.3:</u> 3, 5, 6
	4.4	Similarity and Diagonalization.	<u>Written Homework Section 4.4:</u> 6, 18, 24, 28, 38. Use your work from Sec 4.3: 2, 4, 7, 8, 10 to determine whether A is diagonalizable and if so, give an invertible matrix P and a diagonal matrix D such that $P^{-1}AP = D$ <u>Online Homework Section 4.4:</u> 11
Applications: Sections 3.7 and 4.6 : 2 Lectures			
2 L	3.7 and 4.6	Applications.	<u>Written Homework Section 3.7</u> 5, 6, 7, 8, 9, 12, 15, 18 <u>Online Homework Section 3.7:</u> 6, 9 <u>Written Homework Section 4.6:</u> 4, 6, 8, 10
Chapter 5: 3.5 Lectures			
3.5 Lectures	5.1	Orthogonality in \mathbb{R}^n .	<u>Written Homework Section 5.1:</u> 2, 6, 10, 12 <u>Online Homework Section 5.1:</u> 3, 9, 11
	5.2	Orthogonal Complements and Orthogonal Projections.	<u>Written Homework Section 5.2:</u> 4, 10, 15, 16, 18 <u>Online Homework Section 5.2:</u> 6, 9, 17
	5.3	The Gram-Schmidt Process and Orthogonal Projections.	<u>Written Homework Section 5.3:</u> 3, 6, 8, 10 <u>Online Homework Section 5.3:</u> 5, 7, 9
Chapter 7: 2 Lectures			
2 L	7.3	Least Squares.	<u>Written Homework Section 7.3</u> 4, 6, 8, 20, 22, 30 <u>Online Homework Section 7.3:</u> 1, 3, 7, 19, 36