

### The shortlist.

Here are 2 problems per section that would be good to do. Usually, one is more computational and one is more conceptual. You should consider doing more problems than these! Also, you should think through the T/F questions in each section.

Section	A couple problems
1.1: Systems of linear equations	13, 25
1.2: Row reduction and echelon form	11, 29+31
1.3: Vector equations	15, 25
1.4: The matrix equation $A\mathbf{x} = \mathbf{b}$	13, 31
1.5: Solution sets of linear systems	17, 37
1.7: Linear independence	5, 29
1.8: Introduction to linear transformations	17, 31
1.9: The matrix of a linear transformation	21, 33
2.1: Matrix operations	9, 25
2.2: The inverse of a matrix	7, 19
2.3: Characterizations of invertible matrices	7, 23
3.1: Introduction to determinants	13, 37
3.2: Properties of determinants	23, 33
3.3: Cramers rule, volume, and linear transformations	23, 25
4.1: Vector spaces and subspaces	11, 33
4.2: Null spaces, column spaces, and linear transformations	21, 33
4.3: Linearly independent sets: bases	9, 33
4.4: Coordinate systems	7, 29
4.5: The dimension of a vector space	11, 29
4.6: Rank	4, 23
4.7: Change of basis	9, 13
5.1: Eigenvectors and eigenvalues	15, 35
5.2: The characteristic equation	11, 17
5.3: Diagonalization	13, 31+32
5.4: Eigenvectors and linear transformations	7, 27
5.5: Complex eigenvalues	3, 17