Before starting the homework problems, read each section and write down carefully all the definitions and results in that section. Then work through the examples in the textbook.

Make sure you understand and can define the following terms:

1.9  invertible matrix
     inverse of a matrix

3.2  vector space (Thm 1)
     subspace of a vector space (Thm 2)

3.3  span (of a set of vectors)
     null space (of a matrix)
     range (of a matrix)
     column space (of a matrix)
     row space (of a matrix)

1.9:  4, 8, 15, 16, 17, 22, 25, 28, 34, 36, 39, 42, 47, 51, 68, 69, 72 (hint: show that AB is invertible by finding a candidate for its inverse, and verifying that it is, indeed, its inverse)

3.1:  5, 6, 11, 13, 18, 20, 22, 23

3.2:  1, 2, 4, 8, 15, 17 (verify explicitly the 3 required subspace conditions in these 6 problems, or show which one fails and an example of how it fails), 18, 20, 28, 31
     Note: #28 is asking you to show that the upper half plane in R2 is not a vector space. There are two properties that fail. Indicate which ones, and give examples.

3.3:  1, 6, 11, 15, 21(a,b,c), 22, 24, 27.
     Justify all your answers clearly.

In each section, do other problems from the same category if -- when attempting one of them -- you feel that you can use more practice.