Summary/review for exam 1 (Chapters 1,2)

The material can be grouped into three categories: definitions, properties, and skills. Generally speaking, it is difficult to do much without knowing the definitions. The properties are most useful for proofs. (On an exam, I don't expect you to use the book's name/number for the theorems that you are using in a proof.) The skills are applied to computational problems with concrete numbers. Note, however, that some homework problems have mixed both properties and skills (such as 2.1.15).

Definitions Linear systems, homogeneous systems, solutions, trivial solution, matrices, scalars, augmented matrices, matrix algebra (especially multiplication), transpose, diagonal, identity, triangular, inverse, symmetry and skew-symmetry, REF and RREF, row equivalence, elementary matrices

Properties Multiplication identities (see notes or pp. 24–26), Theorems 1.1–1.4, Theorems 1.6–1.8, Theorems 2.2–2.3, Theorem 2.4, Theorems 2.5–2.7, box on page 104 (my Big Theorem)

Skills Matrix algebra, Gaussian and Gauss–Jordan elimination, solving a linear system from the REF or from the RREF (including systems with zero, one, or infinitely many solutions), matrix inverse

As a rule, exams are biased towards skills, but you can expect 15–25% to be based on more abstract statements about properties.

There will be no books, notes, or devices allowed for use during the exam.