Doing the routine routinely

Consider a system of linear equations, with any field as scalars, $A\vec{x} = \vec{b}$. The elimination process yields that the given system is equivalent to one where A is in reduced row-echelon form. There, the equations say that there are *free variables* (which can take all possible values) such that each remaining variable is expressed in terms of the free variables that come after it. For the homogeneous case (namely, where $\vec{b} = \vec{0}$), this gives a basis for the null space of L_A, a.k.a. the null space of A.

I recommend that you go to the Schaum Outline and work out some examples until you are comfortable with the process. It will be coming up again, fairly soon.