Gaussian Elimination Method

Process of Forward Elimination in Gaussian Elimination Method

Given a system of n linear equations with n unknowns.

- Write the augmented matrix of the system.
- Start from the top entry ("pivot entry") of the first nonzero column of this matrix

  Step 1: If the pivot entry is zero, swap the pivot row with some row below (so that the pivot entry is nonzero).

  Step 2: Eliminate all other entries below the pivot entry in the same column (i.e. make the entries below the pivot entry become zero) by subtracting suitable multiples of the pivot row from the other rows below.

  Step 3: Move the pivot entry down one row and over one column (to the right).
  - If all entries below the new pivot entry are zero, move to the next column.

Repeat **Step 1** until the process is done with column $n - 1$ of the augmented matrix.