

Solving Systems of Equations (with Matrices)

(Appendix Pages 583-595)



Math Learning Target:

"I can solve a system of equations using Gaussian Elimination and matrices."

Matrix

A **matrix** is a form of a system of equations that omits the variables and uses only the coefficients. Thus, it is an array of numbers. *Gaussian Elimination* is one technique used to solve a system using matrices.

Study the following lessons from



Part 2, Part 3 and Part 4*

****For Part 4 stop the video at 3:33***

<https://courseware.cemc.uwaterloo.ca/11/assignments/181/1>



Reference:

Elementary Row Operations for Matrices (Systems of Equations)

1. Multiply a row (equation) by a nonzero constant.
2. Interchange any pair of rows (equations).
3. Add a multiple of one row (equation) to a second row (equation) to replace the second row (equation).

Properties of a Matrix in Row-Echelon Form

1. All rows that consist entirely of zeros must be written at the bottom of the matrix.
2. In any two successive rows that do not consist entirely of zeros, the first nonzero number in the lower row must occur farther to the right than the first nonzero number in the row directly above.

MathSIP!

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*do not "interpret" the solution