

Augmented Matrix

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Augmented Matrix

How to write the **Augmented Matrix** for a system of linear equations.

$$2x_1 + x_2 + 3x_3 = 5$$

$$x_1 + 3x_2 + 5x_3 = 7$$

$$x_1 + x_2 - 2x_3 = 4$$

$$2x_1 + x_2 + 3x_3 = 5$$

$$x_1 + 3x_2 + 5x_3 = 7$$

$$x_1 + x_2 - 2x_3 = 4$$

$$2x_1 + x_2 + 3x_3 = 5$$

$$x_1 + 3x_2 + 5x_3 = 7$$

$$x_1 + x_2 - 2x_3 = 4$$

Written in matrix form

$$\begin{pmatrix} 2 & 1 & 3 \\ 1 & 3 & 5 \\ 1 & 1 & -2 \end{pmatrix} \begin{pmatrix} x_1 \\ x_2 \\ x_3 \end{pmatrix} = \begin{pmatrix} 5 \\ 7 \\ 4 \end{pmatrix}$$

$$\begin{pmatrix} 2 & 1 & 3 \\ 1 & 3 & 5 \\ 1 & 1 & -2 \end{pmatrix} \begin{pmatrix} x_1 \\ x_2 \\ x_3 \end{pmatrix} = \begin{pmatrix} 5 \\ 7 \\ 4 \end{pmatrix}$$

$$\begin{pmatrix} 2 & 1 & 3 & \vdots & 5 \\ 1 & 3 & 5 & \vdots & 7 \\ 1 & 1 & -2 & \vdots & 4 \end{pmatrix}$$

