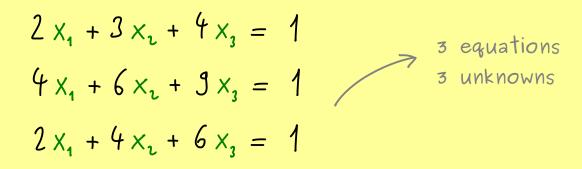
ON STEADY

The Bright Side of Mathematics



Linear Algebra - Part 36

System of linear equations:



short notation: $A = b \xrightarrow{\text{augmented matrix}} (A \mid b)$

Example:

Better method: Gaussian elimination

Example:
$$X_1 + 3X_2 = 7$$
 (equation 1)
 $2 x_1 - x_2 = 0$ (equation 2) - 2 (equation 1)
eliminate X_1
 $X_1 + 3X_2 = 7$ (equation 1)
 $X_1 + 3X_2 = 7$ (equation 1)
 $X_1 + 3X_2 = 7$ (equation 1)

$$0 - 7x_{1} = -14$$
 (equation 2)' $\cdot \left(-\frac{1}{7}\right)$

$$x_{2} = 2$$
 (equation 2)
 $\implies X = \begin{pmatrix} 1 \\ 2 \end{pmatrix}$ solution