Key Takeaways

System of linear equations (Cramer's rule):

Two variables :

Consider system of equations

$$a_1x + b_1y = c_1$$
$$a_2x + b_2y = c_2$$

$$\Delta = \begin{vmatrix} a_1 & b_1 \\ a_2 & b_2 \end{vmatrix} = a_1b_2 - a_2b_1$$

$$\Delta_1(\Delta_x) = \begin{vmatrix} c_1 & b_1 \\ c_2 & b_2 \end{vmatrix} = c_1b_2 - c_2b_1$$

$$\Delta_2(\Delta_y) = \begin{vmatrix} a_1 & c_1 \\ a_2 & c_2 \end{vmatrix} = a_1c_2 - a_2c_1$$

Solution : $x = \frac{\Delta_x}{\Delta}$; $y = \frac{\Delta_y}{\Delta}$

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