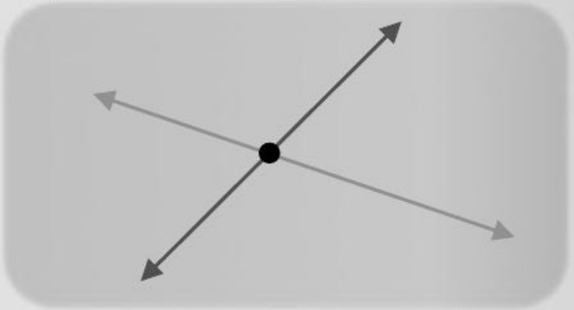
Two variables :

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

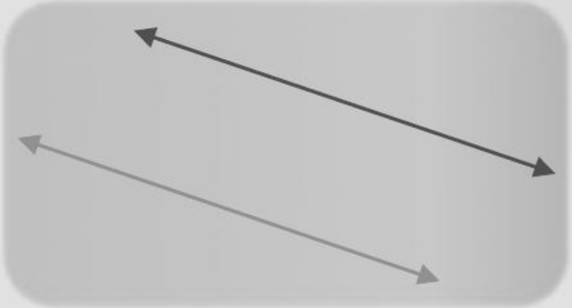
$$\Delta = \begin{vmatrix} a_1 & b_1 \\ a_2 & b_2 \end{vmatrix} = a_1b_2 - a_2b_1$$

Consistent System:

(i) If $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$, then system of equations has unique solution.



(ii) If $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$, then system of equations has infinite solution.



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