Linear Equations in Two Variables

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10^{th} Maths - Chapter 3

This is Problem-4.1 from Exercise 3.2

1. On comparing the ratios $\frac{a_1}{a_2}$, $\frac{b_1}{b_2}$,$\frac{c_1}{c_2}$, find out whether the lines representing the following pairs of linear equations intersect at a point, are parallel or coincident:
   5x-3y=11
   -10x+6y=22

Solution:
This can also be written as:

$$\begin{pmatrix} 5 & -3 & 11 \\ -10 & 6 & 22 \end{pmatrix} \tag{1}$$

now,Making $R_2 \to 2R_1 - R_2$
we get,

$$\begin{pmatrix} 5 & -3 & 11 \\ 0 & 0 & 0 \end{pmatrix} \tag{2}$$

Since, we are getting zero in R_2
It is a dependent equation.