

Linear Equations in Two Variables

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10th Maths - Chapter 3

This is Problem-4.1 from Exercise 3.2

1. Which of the following pairs of linear equations are consistent/inconsistent?
If consistent, obtain the solution graphically:
(i) $x + y = 5$, $2x + 2y = 10$

Solution:

Given Data: $x + y = 5$

$2x + 2y = 10$

This can also be written as:

$$\begin{pmatrix} 1 & 1 & 5 \\ 2 & 2 & 10 \end{pmatrix} \quad (1)$$

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

$$\begin{pmatrix} 1 & 1 & 5 \\ 0 & 0 & 0 \end{pmatrix} \quad (2)$$

Since, we are getting zero in R_2
The given lines are coinciding.