Linear Equations in Two Variables

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10^{th} Maths - Chapter 3

This is Problem-4.3 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 = 8, 3x - 3y = 16

Solution:
Given Data:x - y = 8
3x - 3y = 16

This can also be written as:

$$\begin{pmatrix} 1 & -1 & 8 \\ 3 & -3 & 16 \end{pmatrix} \tag{1}$$

now,Making $R_2 \to 3R_1 - R_2$
we get,

$$\begin{pmatrix} 1 & -1 & 8 \\ 0 & 0 & 8 \end{pmatrix} \tag{2}$$

these equations have no solution because they are inconsistent•