Linear Equations in Two Variables

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10th Maths - Chapter 3

This is Problem-2 from Exercise 3.1

1. The coach of a cricket team buys 3 bats and 6 balls for ' 3900. Later, she buys another bat and 3 more balls of the same kind for ' 1300. Represent this situation algebraically and geometrically

Solution:
Given Data:
3x+6y=3900
1x+3y=1300

This can also be written as:

$$\begin{pmatrix} 3 & 6 & 3900 \\ 1 & 3 & 1300 \end{pmatrix} \qquad (1)$$

now,Making $R_1 \to R1 = R1 - 2R2$

we get, $\begin{pmatrix} 1 \\ 0 \\ 1300 \end{pmatrix}$ next step,

$$\begin{pmatrix} 1 & 0 & 1300 \\ 1 & 3 & 1300 \end{pmatrix} \qquad (2)$$

now,Making $R_1 \rightarrow R2 = R2 - R1$
we get,

$$\begin{pmatrix} 1 & 0 & 1300 \\ 0 & 3 & 0 \end{pmatrix} \tag{3}$$

$$The final solution is x = 1300, y = 0 \tag{4}$$