

4.4.19

AI25BTECH11023 - Pratik R

QUESTION

Assertion (A): Point $P(0,2)$ is point of intersection of Y-axis with the line $3x + 2y = 4$.

Reason (R): The distance of point $P(0, 2)$ from X-axis is 2 units.

SOLUTION

The given equation can be expressed as

$$\begin{pmatrix} 3 & 2 \end{pmatrix} x = 4 \quad (0.1)$$

where $n^\top = \begin{pmatrix} 3 & 2 \end{pmatrix}$ and $c = 4$.

Putting $P(0, 2)$ in the equation of line

$$n^\top P = 4 = c \quad (0.2)$$

Since $(0, 2)$ lies on y-axis, Assertion is correct.

Distance of (x, y) from x-axis is $|y|$

Hence Reason is also correct but it is not a valid reason for assertion.

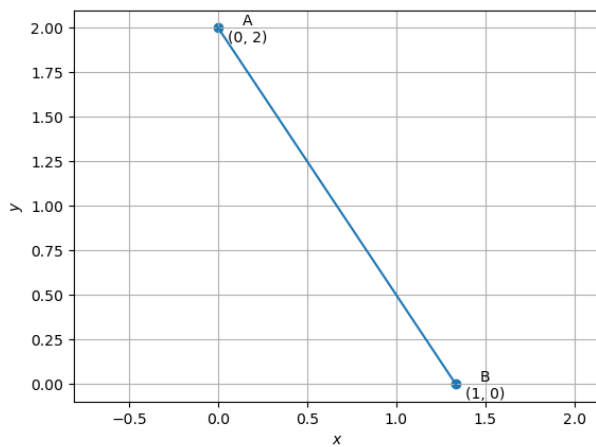


Fig. 0.1: Plot of line $3x + 2y = 4$