

# Assignment 4

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Download all python codes from

<https://github.com/ka-raja-babu/Matrix-Theory/tree/main/Assignment4/Codes>

and latex-tikz codes from

<https://github.com/ka-raja-babu/Matrix-Theory/tree/main/Assignment4>

## 1 QUESTION NO. 2.5

If the point  $\begin{pmatrix} 3 \\ 4 \end{pmatrix}$  lies on the graph of the equation  $3y = ax + 7$ , find the value of  $a$ .

## 2 SOLUTION

The given equation is

$$3y = ax + 7 \quad (2.0.1)$$

$$\Rightarrow \begin{pmatrix} -a & 3 \end{pmatrix} \mathbf{x} = 7 \quad (2.0.2)$$

$\therefore$  Given point  $\mathbf{P} \begin{pmatrix} 3 \\ 4 \end{pmatrix}$  lies on the graph of this equation and satisfies it.

$\therefore$

$$\begin{pmatrix} -a & 3 \end{pmatrix} \begin{pmatrix} 3 \\ 4 \end{pmatrix} = 7 \quad (2.0.3)$$

$$\Rightarrow -3a + 12 = 7 \quad (2.0.4)$$

$$\Rightarrow a = \frac{5}{3} \quad (2.0.5)$$

Hence, the equation can be written as

$$\begin{pmatrix} \frac{-5}{3} & 3 \end{pmatrix} \mathbf{x} = 7 \quad (2.0.6)$$

Plot of the given equation

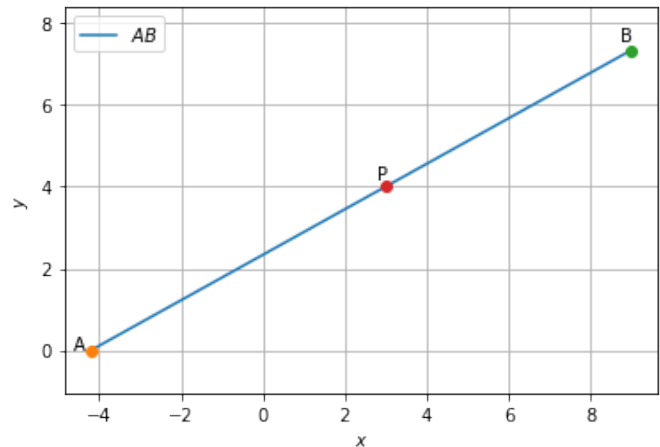


Fig. 2.1: Line AB