Assignment 4

K.A. Raja Babu

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

$$3y = ax + 7 \tag{2.0.1}$$

$$\implies \begin{pmatrix}-a & 3\end{pmatrix}\mathbf{x} = 7 \tag{2.0.2}$$

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

$\therefore$

$$\begin{pmatrix}-a & 3\end{pmatrix}\begin{pmatrix}3\\4\end{pmatrix} = 7 \tag{2.0.3}$$

$$\implies -3a + 12 = 7 \tag{2.0.4}$$

$$\implies a = \frac{5}{3} \tag{2.0.5}$$

Hence,the equation can be written as

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

Plot of the given equation

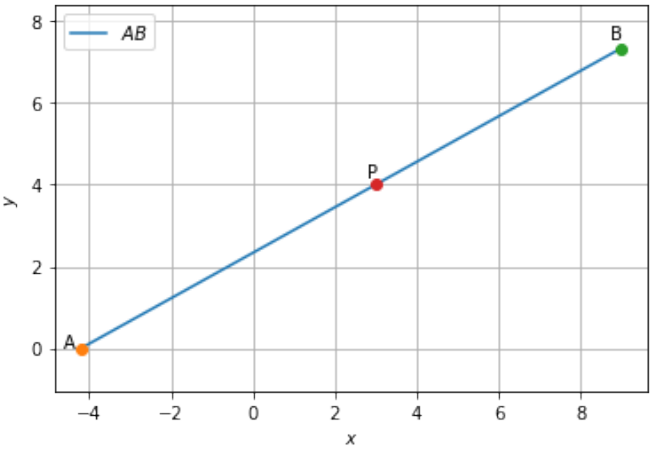

Fig. 2.1: Line AB