

Assignment 1

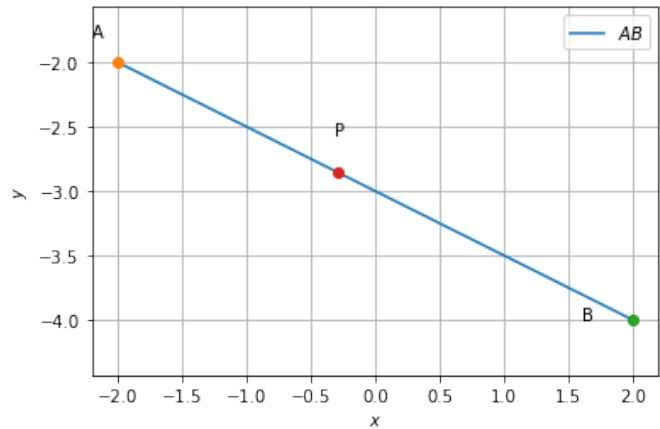
P VENKATA PRANEETH

Find Python Codes from below link

<https://github.com/praneeth2720/IIT-H/blob/main/Assignment1/st-lines.py>

and latex codes from

<https://github.com/praneeth2720/IIT-H/tree/main/Assignment1>



1 CBSE 10TH 2008 PAPER.

1.1 Question 21

IF P divides the join of A(-2, -2) and B(2,-4) such that $\frac{AP}{AB} = \frac{3}{7}$. Find the Coordinates of P.

1.2 Solution

Let A and B are the end points of the line

$A = \begin{pmatrix} -2 \\ -2 \end{pmatrix}$ $B = \begin{pmatrix} 2 \\ -4 \end{pmatrix}$ And P be the point that divides line AB in ratio 3:4

By using section formula

$$P = \frac{4A + 3B}{7} \quad (1.2.1)$$

$$P = \frac{1}{7} \left(4 \begin{pmatrix} -2 \\ -2 \end{pmatrix} + 3 \begin{pmatrix} 2 \\ -4 \end{pmatrix} \right) \quad (1.2.2)$$

$$(1.2.3)$$

$$P = \frac{1}{7} \left(\begin{pmatrix} -8 \\ -8 \end{pmatrix} + \begin{pmatrix} 6 \\ -12 \end{pmatrix} \right) \quad (1.2.4)$$

$$P = \frac{1}{7} \begin{pmatrix} -2 \\ -20 \end{pmatrix} \quad (1.2.5)$$

$$(1.2.6)$$

\therefore the point P that divides line AB is $\begin{pmatrix} -\frac{2}{7} \\ -\frac{20}{7} \end{pmatrix}$