Assignment-2

AI24BTECH11002 - K.AKSHAY TEJA

1 Vector Arithmetic

1) If the coordinates of points **A** and **B** are $(-2,-2)$ and $(2,-4)$ respectively, find the coordinates of **P** such that $AP = \frac{3}{7}AB$, and **P** lies on the line segment AB.

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Solution: Given, coordinates of **A** are $(-2,-2)$ and coordinates of **B** are $(2,-4)$.**P** divides **AB** in ratio 3:4.So, k=$\frac{3}{4}$

$$\implies \mathbf{P} = \frac{\frac{3}{4}\mathbf{B} + \mathbf{A}}{\frac{3}{4} + 1}$$

$$= \begin{pmatrix} \frac{-2}{7} \\ \frac{-20}{7} \end{pmatrix}$$