Coordinate Geometry

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Class 10^{th} Maths - Chapter 7

This is Problem-7 from Exercise 7.4

1. Find the coordinates of a point A, where AB is the diameter of a circle whose centre is (2, -3) and B is (1, 4).

Solution: : $c = \frac{mB+nA}{m+n}$
$Cm + Cn = mB + nA$
$\frac{Cm+Cn-mB}{n} = A$

$$\mathbf{c} = \begin{pmatrix} 2 \\ -3 \end{pmatrix} \tag{1}$$

$$\mathbf{b} = \begin{pmatrix} 1 \\ 4 \end{pmatrix} \tag{2}$$

$$\tag{3}$$

By taking m=1 and n=1

$$so, \tag{4}$$

$$\frac{\begin{pmatrix} 2 \\ -3 \end{pmatrix} + \begin{pmatrix} 2 \\ -3 \end{pmatrix} - \begin{pmatrix} 1 \\ 4 \end{pmatrix}}{1} \tag{5}$$

By adding the x,
2+2-1=3
By adding the y,
-3-3-4=10
hence,the coordinates are (3,-10)

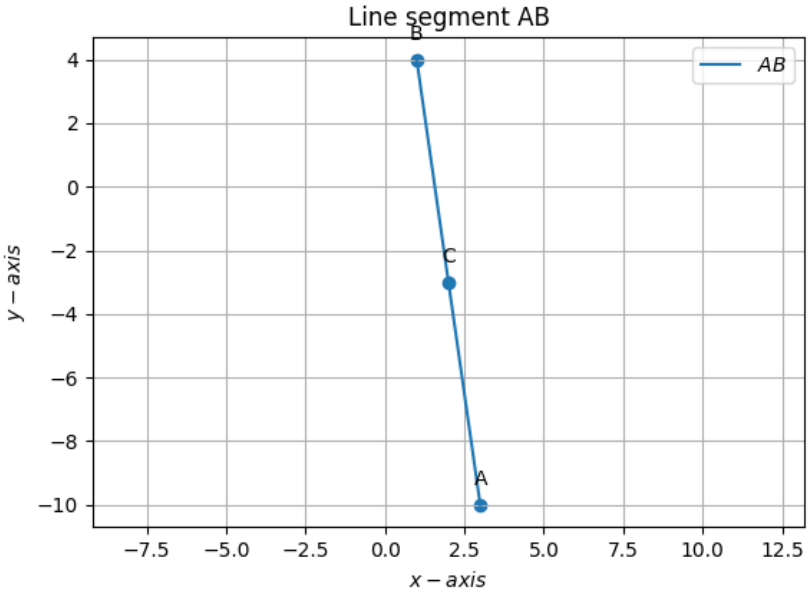

Figure 1: Line segment AB