

Coordinate Geometry

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Class 10th Maths - Chapter 7

This is Problem-1.1 from Exercise 7.3

1. Find the area of the triangle whose vertices are:

$$(2, 3), (-1, 0), (2, -4) \quad (1)$$

Solution:

Given Data:

$$\mathbf{A} = \begin{pmatrix} 2 \\ 3 \end{pmatrix} \quad (2)$$

$$\mathbf{B} = \begin{pmatrix} -1 \\ 0 \end{pmatrix} \quad (3)$$

$$\mathbf{C} = \begin{pmatrix} 2 \\ -4 \end{pmatrix} \quad (4)$$

(5)

$$\mathbf{AB} = \begin{pmatrix} -3 \\ -3 \end{pmatrix} \quad (6)$$

$$\mathbf{BC} = \begin{pmatrix} 3 \\ -4 \end{pmatrix} \quad (7)$$

(8)

AREA OF THE TRIANGLE:

$$\frac{1}{2} \|\mathbf{A} - \mathbf{B} \times \mathbf{B} - \mathbf{C}\| \quad (9)$$

$$\frac{1}{2} \begin{vmatrix} -3 & 3 \\ -3 & -4 \end{vmatrix} \quad (10)$$

$$\frac{1}{2} \|12 + 9\| \quad (11)$$

$$\frac{1}{2} \|21\| \quad (12)$$

$$\frac{21}{2} sq.units \quad (13)$$

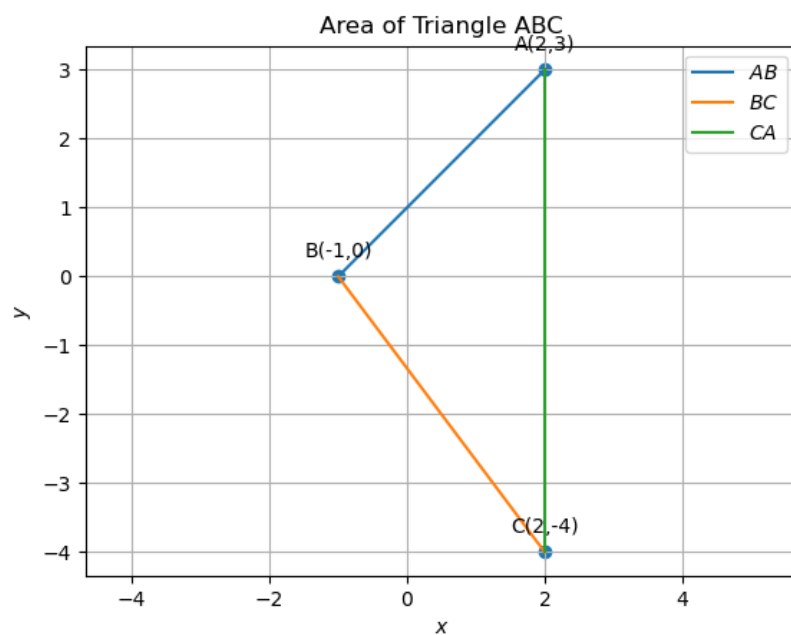


Figure 1: Triangle ABC