

Coordinate Geometry

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August 10, 2023

Class 10th Maths - Chapter 7

This is Problem-1(ii) from Exercise 7.3

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

$$(-5, -1), (3, -5), (5, 2) \quad (1)$$

Solution:

Given Data:

$$\mathbf{A} = \begin{pmatrix} -5 \\ -1 \end{pmatrix} \quad (2)$$

$$\mathbf{B} = \begin{pmatrix} 3 \\ -5 \end{pmatrix} \quad (3)$$

$$\mathbf{C} = \begin{pmatrix} 5 \\ 2 \end{pmatrix} \quad (4)$$

(5)

$$\mathbf{AB} = \begin{pmatrix} 8 \\ -4 \end{pmatrix} \quad (6)$$

$$\mathbf{AC} = \begin{pmatrix} 10 \\ 3 \end{pmatrix} \quad (7)$$

(8)

AREA OF THE TRIANGLE:

(9)

$$= \frac{1}{2} \|\mathbf{AB} \times \mathbf{AC}\| \quad (10)$$

(11)

$$= \frac{1}{2} \begin{vmatrix} 8 & 10 \\ -4 & 3 \end{vmatrix} \quad (12)$$

(13)

$$= \frac{1}{2} \|24 + 40\| \quad (14)$$

(15)

$$= \frac{1}{2} \|64\| \quad (16)$$

(17)

$$= 32sq.units \quad (18)$$

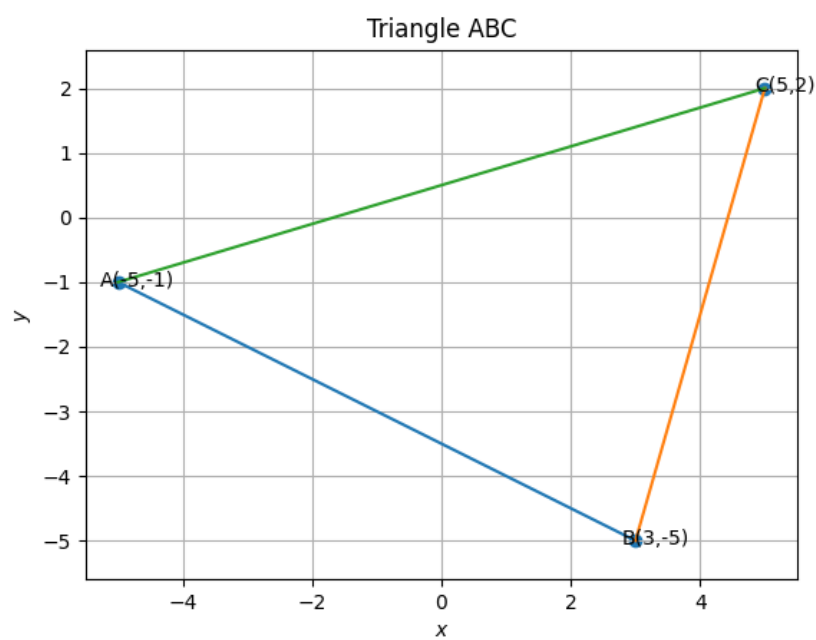


Figure 1: Triangle ABC