

Coordinate Geometry

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Class 10th Maths - Chapter 7

AREA OF THE TRIANGLE:

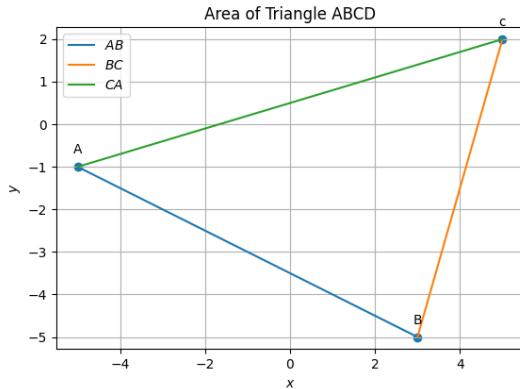
This is Problem-1(ii) from Exercise 7.3

- Find the area of the triangle whose vertices are:

$$(-5, -1), (3, -5), (5, 2) \quad (0.0.1)$$

Solution:

Construction



Given Data:

$$A = \begin{pmatrix} -5 \\ -1 \end{pmatrix} \quad (0.0.2)$$

$$B = \begin{pmatrix} 3 \\ -5 \end{pmatrix} \quad (0.0.3)$$

$$C = \begin{pmatrix} 5 \\ 2 \end{pmatrix} \quad (0.0.4)$$

(0.0.5)

$$\mathbf{AB} = \begin{pmatrix} 8 \\ -4 \end{pmatrix} \quad (0.0.6)$$

$$\mathbf{BC} = \begin{pmatrix} 2 \\ 7 \end{pmatrix} \quad (0.0.7)$$

(0.0.8)

(0.0.9)

$$= \frac{1}{2} | (AB) \times (BC) | \quad (0.0.10)$$

(0.0.11)

$$= \frac{1}{2} \begin{vmatrix} 8 & 2 \\ -4 & 7 \end{vmatrix} \quad (0.0.12)$$

(0.0.13)

$$= \frac{1}{2} | 56 + 8 | \quad (0.0.14)$$

(0.0.15)

$$= \frac{1}{2} | 64 | \quad (0.0.16)$$

(0.0.17)

$$= 32 \text{ sq. units} \quad (0.0.18)$$