

# Coordinate Geometry

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## Class 10<sup>th</sup> Maths - Chapter 7

This is Problem-1.1 from Exercise 7.3

- Find the area of the triangle whose vertices are:

$$(2, 3), (-1, 0), (2, -4) \quad (0.0.1)$$

**Solution:**

### Construction

$$\mathbf{AB} = \begin{pmatrix} -3 \\ -3 \end{pmatrix} \quad (0.0.6)$$

$$\mathbf{BC} = \begin{pmatrix} 3 \\ -4 \end{pmatrix} \quad (0.0.7)$$

$$(0.0.8)$$

AREA OF THE TRIANGLE:

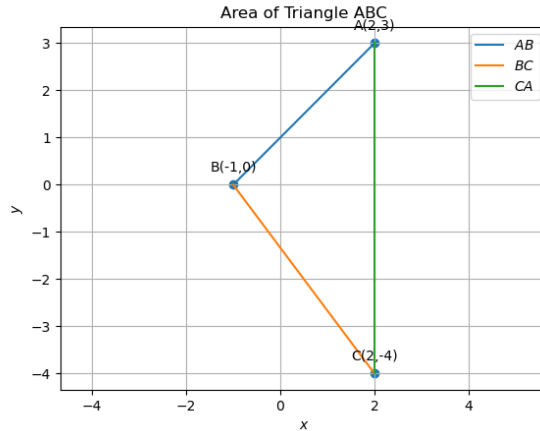
$$\frac{1}{2} \|\mathbf{A} - \mathbf{B} \times \mathbf{B} - \mathbf{C}\| \quad (0.0.9)$$

$$\frac{1}{2} \begin{vmatrix} -3 & 3 \\ -3 & -4 \end{vmatrix} \quad (0.0.10)$$

$$\frac{1}{2} \|12 + 9\| \quad (0.0.11)$$

$$\frac{1}{2} \|21\| \quad (0.0.12)$$

$$\frac{21}{2} \text{sq. units} \quad (0.0.13)$$



Given Data:

$$A = \begin{pmatrix} 2 \\ 3 \end{pmatrix} \quad (0.0.2)$$

$$B = \begin{pmatrix} -1 \\ 0 \end{pmatrix} \quad (0.0.3)$$

$$C = \begin{pmatrix} 2 \\ -4 \end{pmatrix} \quad (0.0.4)$$

$$(0.0.5)$$