

VECTORS

1 10th Maths - EXERCISE-7.2

1. Find the coordinates of the points of trisection of the line segment joining $(4, -1)$ and $(-2, -3)$

2 SOLUTION

Given points are

$$\mathbf{Q} = (4, -1), \mathbf{P} = (-2, -3) \quad (1)$$

The equation of the formula is

$$\mathbf{R} = \frac{\mathbf{Q} + n\mathbf{P}}{1 + n} \quad (2)$$

Ratio 2:1 has taken

$$n = \frac{1}{2} \quad (3)$$

$$\mathbf{R} = \frac{(4, -1) + \frac{1}{2}(-2, -3)}{1 + \frac{1}{2}} \quad (4)$$

$$\frac{(4, -1) + (-1, -3/2)}{\frac{3}{2}} \quad (5)$$

$$\frac{4-1}{\frac{3}{2}}, \frac{(-1-3/2)}{\frac{3}{2}} \quad (6)$$

$$\mathbf{R} = (2, -5/3) \quad (7)$$

Ratio 1:2 has taken

$$n = 2 \quad (8)$$

$$\mathbf{S} = \frac{(4 \ -1) + 2(-2 \ -3)}{1 + 2} \quad (9)$$

$$\frac{(4 \ -1) + (-4 \ -6)}{3} \quad (10)$$

$$\frac{4 - 4}{3}; \frac{(-1 - 6)}{3} \quad (11)$$

$$\mathbf{S} = (0 \ -7/3) \quad (12)$$

3 Figure

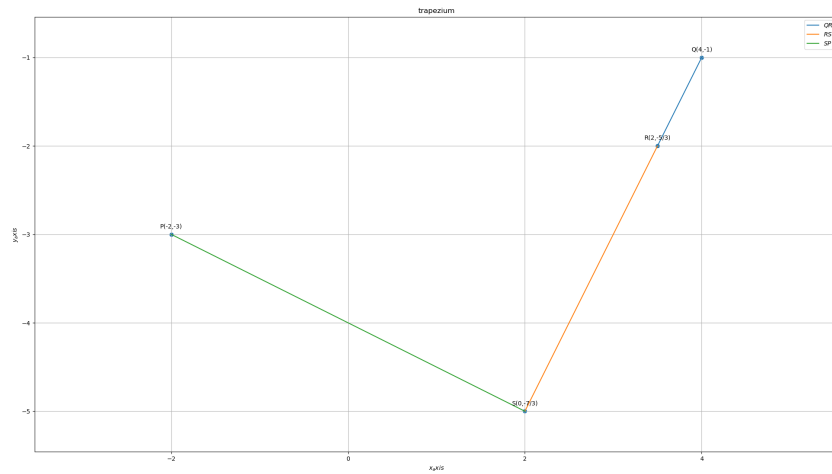


Figure 1: trisecton

<https://github.com/prasaddeva287/FWC/tree/main/VECTOR-2/codes>