BASICS OF PROGRAMMING ASSIGNMENT - 1

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CHAPTER II EX-II Q.3-II

Showing That the following triads of points form right angled triangles or Not:

$$\mathbf{P} = \begin{pmatrix} 2 \\ 2 \end{pmatrix}, \mathbf{Q} = \begin{pmatrix} 6 \\ 3 \end{pmatrix}, \mathbf{R} = \begin{pmatrix} 4 \\ 11 \end{pmatrix} \quad (1)$$

SOLUTION

Pythagoras Theorem:=

$$Hypotenuse^2 = Base^2 + Height^2 \quad (2)$$

$$(P - Q) = \sqrt{(6-2)^2 + (3-2)^2} = 5 \quad (3)$$

$$(Q - R) = \sqrt{(6-4)^2 + (11-3)^2} = 66 \quad (4)$$

$$(P - R) = \sqrt{(4-2)^2 + (11-2)^2} = 83 \quad (5)$$

Maximum length is Hypotenuse

$$Hypotenuse(AC) = (P - R) = 83 \quad (6)$$

$$Base(AB) = (P - Q) = 5 \quad (7)$$

$$Height(BC) = (Q - R) = 66 \quad (8)$$

Now To be An Right Angled Triangle:

$$AC^2 = AB^2 + BC^2 \quad (9)$$

But Here I Can See:

$$AC^2(83^2)! = AB^2(5^2) + BC^2(66^2) \quad (10)$$

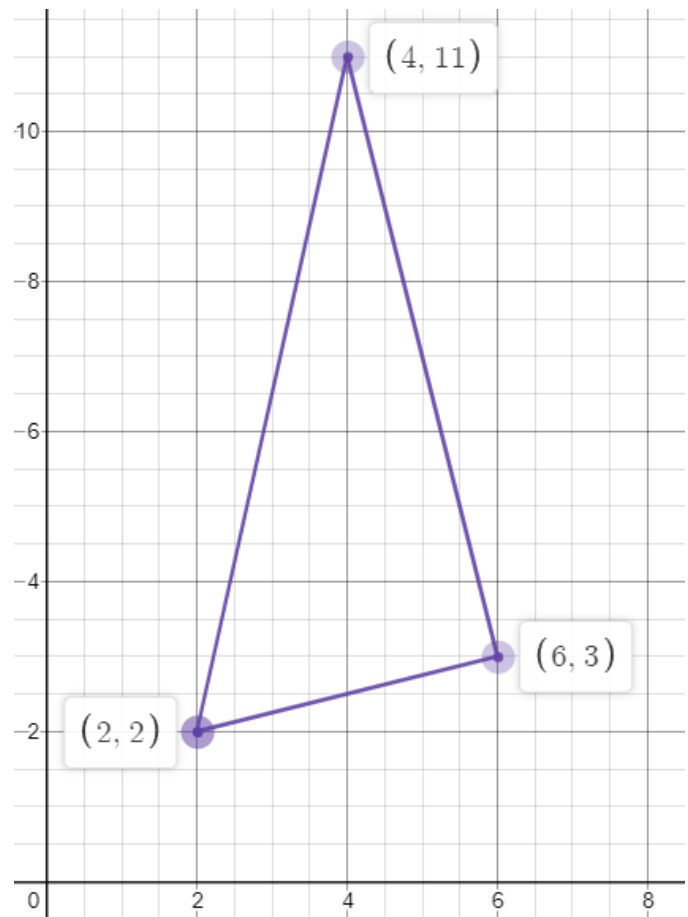So I Can Say That These Three Points(P,Q,R) doesn't forming Right Angled Triangle

Fig. 0: Triangle