Coordinate Geometry

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10th Maths - Chapter 7

This is Problem-4 from Exercise 7.1

1. Check whether $(5, -2)$, $(6, 4)$ and $(7, -2)$ are the vertices of an isosceles triangle.
   Solution: :
   By distance formula

   $$AB = \sqrt{(5-6)^2 + (-2-4)^2} = \sqrt{-(1)^2 + (-6)^2} = \sqrt{37}$$
   $$BC = \sqrt{(6-7)^2 + (4-(-2))^2} = \sqrt{-(1)^2 + (6)^2} = \sqrt{37}$$
   $$CA = \sqrt{(7-5)^2 + (-2-(-2))^2} = \sqrt{(2)^2 + 0} = 2$$

   $$Since AB = BC = \sqrt{37}$$

   Hence $(5,2),(6,4)$ $(7,2)$ are vertices of isosceles triangle.