

Quadrilateral ABCD with vertices A(4, 3), B(4, -2), C(-4, -2) and D(-4, 3) is a rectangle, find the length of the diagonals.



Diagonals of quadrilateral are AC and BD.

Distance between points with coordinates (x_1, y_1) and (x_2, y_2) equals:

$$d = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$$

Length of AC equals:

$$AC = \sqrt{(4 - (-4))^2 + (3 - (-2))^2} = \sqrt{64 + 25} = \sqrt{89}$$

Length of BD equals:

$$BD = \sqrt{(4 - (-4))^2 + (3 - (-2))^2} = \sqrt{64 + 25} = \sqrt{89}$$

Answer: $\sqrt{89}$