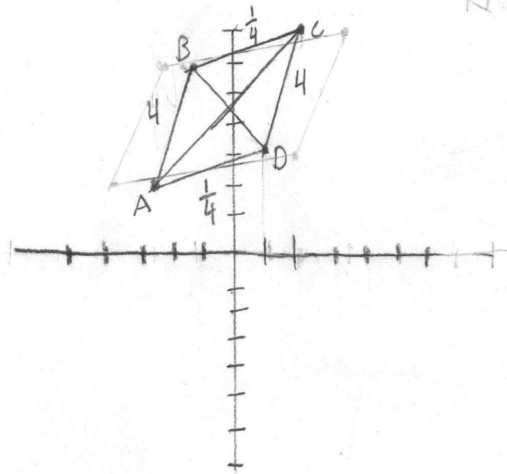


A quadrilateral has vertices at  $A(-3,2)$ ,  $B(-2,6)$ ,  $C(2,7)$  and  $D(1,3)$ . Which, if any, of the following describe quad ABCD: parallelogram, rhombus, rectangle, square, trapezoid. Justify your reasoning.



$$AB = \frac{6-2}{-2-(-3)} = \frac{4}{1} = 4$$

$$BC = \frac{7-6}{2-(-2)} = \frac{1}{4}$$

$$DC = \frac{7-3}{2-1} = \frac{4}{1} = 4$$

$$AD = \frac{3-2}{1-(-3)} = \frac{1}{4}$$

$$AC = \frac{7-2}{2-(-3)} = \frac{5}{5} = 1$$

$$BD = \frac{3-6}{1-(-2)} = \frac{-3}{3} = -1$$

$AC \perp BD$

Since the slopes of opposite sides are = then it makes the shape a parallelogram, but since the diagonals are perpendicular then it makes it a rhombus.