


Unit 6 Lesson 6: Rhombi and Squares (Section 6-5)

OBJ: Recognize and apply the properties of a rhombi. Recognize and apply the properties of a square. Determine whether quadrilaterals are rectangles, rhombi, or squares

Determine whether  ABCD is a rhombus, rectangle or a square. A(1,3), B(-3, 1), C(-1, -3) and D(3, -1) List all that apply and explain.

Because ABCD is a parallelogram we know $AB=CD$ and $BE=AD$

Using the distance formula find AB and BC

$$\mathbf{AB} = \sqrt{(1+3)^2 + (3-1)^2} = \sqrt{20} = 2\sqrt{5} \quad \mathbf{BC} = \sqrt{(-3+1)^2 + (1+3)^2} = \sqrt{20} = 2\sqrt{5}$$

Since the parallelogram has a pair of consecutive sides congruent we know that ABCD is also a RHOMBUS.

m of $\overline{AB} = \frac{1}{2}$ **This means angle B is 90° .** Therefore all 4
 m of $\overline{BC} = -2$ angles are right angles and ABCD is a rectangle.

This proves that ABCD is a rhombus, and a rectangles which then also makes is a square too.