9.16 Rhombi & Squares Coordinate Proofs Name: 3/26/19

To prove a quadrilateral is a rhombus...

First, prove the quadrilateral is a parallelogram. Then prove:

1) First prove the quadrilateral is a parallelogram. Then, prove it has a pair of consecutive sides that are congruent.

I: Find the slopes of all 4 sides
II: Find the length of all 4 sides. Are they ≅?

2) First prove the quadrilateral is a parallelogram. Then, prove either diagonal bisects two angles of the parallelogram.

* can't do on a graph OR

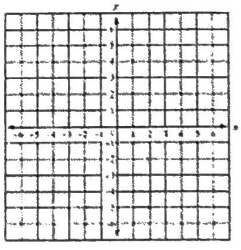
3) Prove the diagonals are perpendicular bisector of each other.

I: prove it is a parallelogram.
II. Find the slope of both diagonals. Are they opp. reciprocals?

Find the midpoint of both diagonals? Are they the same?

Given: A(–3, –4), B(5, –3), C(1, 4), & D(–7, 3)

Prove: ABCD is a rhombus in 2 different ways



To prove a quadrilateral is a square...

Prove it is both a rectangle and a rhombus!

**HINT...prove 4 right angles & 4 congruent sides....

I: Find slopes of all 4 sides

II: Find the length of all 4 sides. Are they $\cong$?

Given: A(1, 2), B(2, –1), C(5, 0), & D(4, 3)

Prove: ABCD is a square