

# Verifying Figures Based on the Coordinate Plane

To determine whether the figure is a parallelogram, rectangle, square or rhombus given four vertices:

## Parallelograms

**Step 1:** Check to see if a pair of opposite sides are parallel and congruent (same distance)

**Step 2:** Find the slope and distance of the diagonals

If the diagonals are...	Then your parallelogram is...
Congruent (same distance)	Rectangle
Perpendicular (slope & negative reciprocal)	Rhombus
Both properties listed above	Square, (Rhombus, Rectangle)

## Trapezoids

To check if a figure is a trapezoid when given four sets of vertices:

**Step 1:** Determine if the diagonals are congruent by using the distance formula

**Step 2:** Use triangle congruence to prove the base angles congruent

- This basically splits the trapezoid into 4 triangles. The top and bottom ones are congruent and the left and right ones are congruent