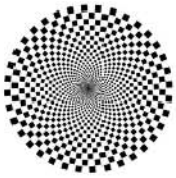
Geometry CC – Mr. Valentino
Unit 9 Lesson 9: Proving Squares

Name: _____
Date: _____ Per: _____

Aim: How can we prove quadrilaterals are squares?



* prove it's a R with ≅ adjacent sides OR a rhombus with a right ∠

How to **prove** that a quadrilateral is a square:

1) **First** show that the quadrilateral is a parallelogram.

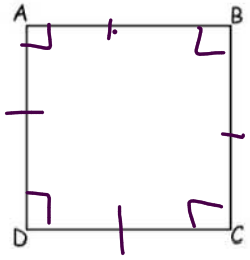
2) **Next** show that the quadrilateral is both a rhombus and a rectangle.
or

---

1) Given: ABCD is a parallelogram

$AB \perp BC$, $AB \cong BC$

Prove: ABCD is a square

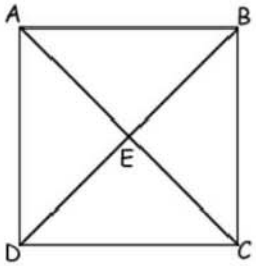


statement	reason
① ABCD is a P, $AB \perp BC$, $AB \cong BC$	① Given
② ∠B is a right ∠	② ⊥ lines form right ∠'s
③ ABCD is a R	③ If a P has a right ∠, it is a R.
④ ABCD is a square	④ If a R has ≅ adjacent sides it is a square.

2) Given: $AE \cong EC$, $ED \cong EB$

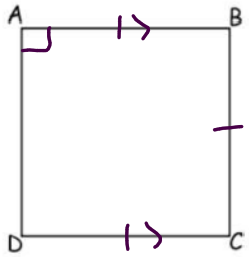
$AB \perp BC$, $AB \cong BC$

Prove: ABCD is a square



3) Given: AB ≅ CD, AB || CD
∠A is a right angle, AB ≅ BC

Prove: ABCD is a square



statement	reason
①	① Given
② ABCD is a P	② One pair of opp. sides are both ≅ and ||.
③ ABCD is a R	③ If a P has a right ∠ it is a R.
④ ABCD is a square	④ If a R has ≅ adj. sides it is a square.

HW

4) Given: AB ≅ CD, AD ≅ CB

BC ⊥ DC, AB ≅ BC

Prove: ABCD is a square