



# Advanced Geometry

## 5.7

### Proving Special Quadrilaterals

# Proving a quadrilateral is a rectangle

*(one of 5 conditions)*

A parallelogram is a rectangle if...

- It contains at least one right angle
- or*
- The diagonals are congruent

A quadrilateral is a rectangle if...

- All four angles are right

# Proving a quadrilateral is a kite

A quadrilateral is a kite if...

- It has two pairs of consecutive congruent sides
- or ■ One of the diagonals is the perpendicular bisector of the other

# Proving a quadrilateral is a rhombus

A parallelogram is a rhombus if...

- It has a pair of consecutive congruent sides


- If a diagonal bisects two angles

A quadrilateral is a rhombus is...

- The diagonals are perpendicular bisectors of each other

# Proving a quadrilateral is a square

A quadrilateral is a square if...

If 

- It is both a rectangle and a rhombus



# Proving that a trapezoid is isosceles

A trapezoid is isosceles if...

- The nonparallel sides are congruent
- or
- The lower or upper base angles are congruent
- or
- The diagonals are congruent



# Sample Problems

- Pages 257 - 258



# Homework

p. 258 #2, 3, 5, 6, 8, 10, 11, 13