PROVING QUADRILATERALS ARE PARALLELOGRAMS
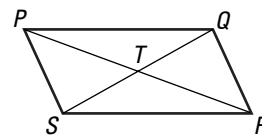
EXAMPLES You are given that $\overline{PQ} \cong \overline{RS}$ and $\overline{PS} \cong \overline{RQ}$. Since both pairs of opposite sides are congruent, *PQRS* must be a parallelogram.

Is *PQRS* a parallelogram? Explain.

9. $PQ = QR$, $RS = SP$

10. $\angle SPQ \cong \angle QRS$, $\angle PQR \cong \angle RSP$

11. $\overline{PS} \cong \overline{RQ}$, $\overline{PQ} \parallel \overline{RS}$

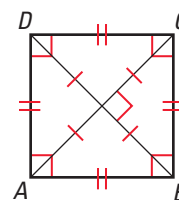**12.** $m\angle PSR + m\angle SRQ = 180°$, $\angle PSR \cong \angle RQP$

6.4 **RHOMBUSES, RECTANGLES, AND SQUARES**

EXAMPLES *ABCD* is a rhombus since it has 4 congruent sides. The diagonals of a rhombus are perpendicular and each one bisects a pair of opposite angles.

ABCD is a rectangle since it has 4 right angles. The diagonals of a rectangle are congruent.

*ABCD* is a square since it has 4 congruent sides and 4 right angles.

List each special quadrilateral for which the statement is always true. Consider parallelograms, rectangles, rhombuses, and squares.

13. Diagonals are perpendicular. **14.** Opposite sides are parallel. **15.** It is equilateral.

6.5 **TRAPEZOIDS AND KITES**

EXAMPLES *EFGH* is a trapezoid. *ABCD* is an isosceles trapezoid. Its base angles and diagonals are congruent. *JKLM* is a kite. Its diagonals are perpendicular, and one pair of opposite angles are congruent.
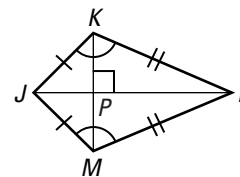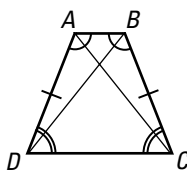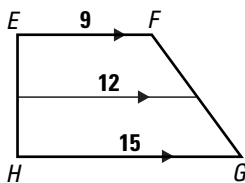
Use the diagram of isosceles trapezoid *ABCD*.

16. If $AB = 6$ and $CD = 16$, find the length of the midsegment.

17. If $m\angle DAB = 112°$, find the measures of the other angles of *ABCD*.

18. Explain how you could use congruent triangles to show that $\angle ACD \cong \angle BDC$.

Chapter 6 *Geometry English-Spanish Reviews*