**6.3 Showing Quadrilaterals are Parallelograms**

**Theorem 6.6**

**Words:** If both sides of a quadrilateral are congruent, then the quadrilateral is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Symbols:** ,If $\overbar{PQ}≅\overbar{SR}$ and $\overbar{QR}≅\overbar{PS}$, $PQRS$ is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Theorem 6.7**

**Words:** If both pairs of opposite angles are congruent, then the quadrilateral is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Symbols:** If $∠P≅∠R$ and$∠Q≅∠S$. $PQRS$ is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Example 1:

Tell whether the quadrilateral is a parallelogram. Explain.

a. b.

  

**Theorem 6.8**

**Words:** If an angle of a quadrilateral is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to both its consecutive angles are, then the quadrilateral is a parallelogram.

**Symbols:** If $m∠P+ m∠Q= \\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$ and $m∠Q+ m∠R= \\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$,

then $PQRS$ is a parallelogram.

**Theorem 6.9**

**Words:** If a diagonals of a quadrilateral \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, then the quadrilateral is a parallelogram.

**Symbols:** $\overbar{QM}≅\overbar{MS}$ and $\overbar{PM}≅\overbar{MR}$. $PQRS$ is a parallelogram.

Example 2: Tell whether the quadrilateral is a parallelogram. Explain.

a. b.

  

c. d.

  

e. f.

 