

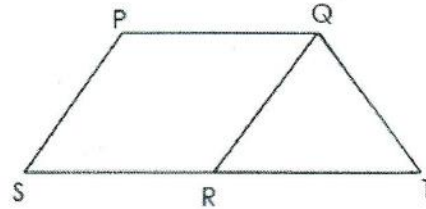
Name: _____ Date: _____ Period: _____

6.8 CLASSWORK/HOMEWORK: Quadrilateral Proofs

Applied Geometry

1. Given: ΔQRT is isosceles, $\overline{PS} \cong \overline{QT}$,
 $\overline{PQ} \cong \overline{RT}$,
 and R is the midpoint of \overline{ST}

Prove: Quad $PQRS$ is a parallelogram



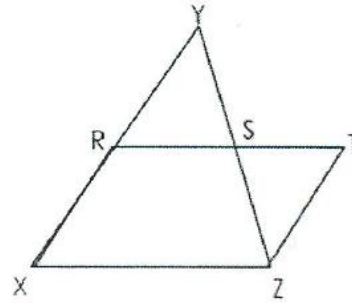
Statements	Reasons
1) ΔQRT is isosceles	1) _____
2) _____	2) The legs of an isosceles Δ are \cong
3) $\overline{PS} \cong \overline{QT}$	3) _____
4) $\overline{PS} \cong \overline{QR}$	4) Substitution or Transitive Property
5) R is the midpoint of \overline{ST}	5) _____
6) $\overline{SR} \cong \overline{RT}$	6) _____
7) _____	7) Given
8) $\overline{PQ} \cong \overline{SR}$	8) _____
9) Quad $PQRS$ is a parallelogram	9) _____

Possible Statements and Reasons, **in addition to what is already given**. May be used more than once.

<ul style="list-style-type: none"> Given Opposite sides of a parallelogram are \cong Opposite sides of a parallelogram are \parallel Midpoints create \cong segments Segment bisectors create \cong segments \parallel lines cut by a transversal create \cong alt. int. \sphericalangle's 	<ul style="list-style-type: none"> SSS, AAS, SAS, ASA, or HL $\overline{QR} \cong \overline{QT}$ $\overline{RS} \cong \overline{RT}$ $\overline{RX} \parallel \overline{TZ}$ Substitution or Transitive Property \parallel lines cut by a transversal create supplementary same-side int. \sphericalangle's
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2. Given: Quad $RTZX$ is a parallelogram,
and S is the midpoint of \overline{RT}

Prove: $\triangle RYS \cong \triangle Tzs$



Statements	Reasons
1) Quad $RTZX$ is a parallelogram	1) _____
2) _____	2) Opposite sides of a parallelogram are \parallel
3) $\overline{YX} \parallel \overline{TZ}$	3) Points Y, R and X are collinear
4) $\sphericalangle YRS$ and $\sphericalangle Tzs$ are Alternate Interior \sphericalangle 's	4) Definition of Alternate Interior \sphericalangle 's
5) $\sphericalangle RYS \cong \sphericalangle Tzs$ and $\sphericalangle YRS \cong \sphericalangle Tzs$	5) \parallel lines cut by a _____ create _____
6) _____	6) Given
7) _____	7) Midpoints create \cong segments
8) $\sphericalangle RSY$ and $\sphericalangle TSZ$ are vertical \sphericalangle 's	8) _____
9) _____	9) Vertical \sphericalangle 's are \cong
10) $\triangle RYS \cong \triangle Tzs$	10) _____

Possible Statements and Reasons, **in addition to what is already given**. May be used more than once.

<ul style="list-style-type: none"> Given Opposite sides of a parallelogram are \cong Opposite sides of a parallelogram are \parallel Midpoints create \cong segments Definition of vertical \sphericalangle's \parallel lines cut by a transversal create \cong alt. int. \sphericalangle's 	<ul style="list-style-type: none"> SSS, AAS, SAS, ASA, or HL $\sphericalangle RSY \cong \sphericalangle TSZ$ $\overline{RS} \cong \overline{ST}$ $\overline{RX} \parallel \overline{TZ}$ Substitution or Transitive Property \parallel lines cut by a transversal create supplementary same-side int. \sphericalangle's
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