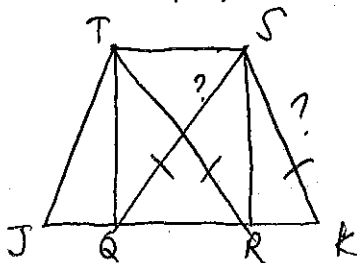


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(30)

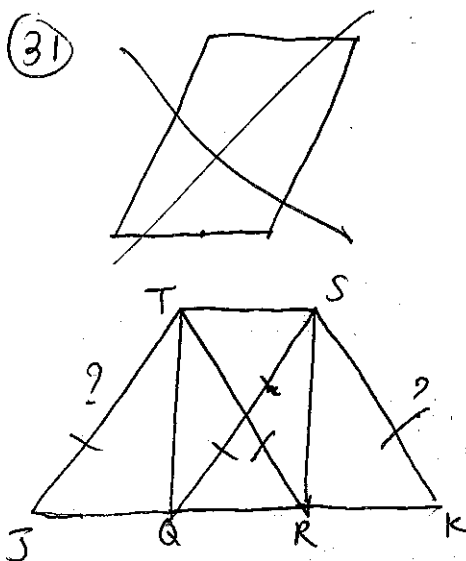


Given: Rectangle QRST  
Parallelogram RKST

Prove:  $\triangle QSK$  is isosceles.

Statements	Reasons
1. Parallelogram RKST.	1. Given.
2. $\overline{RT} \cong \overline{SK}$	2. Opposite sides of a parallelogram are congruent. (1)
3. Rectangle QRST.	3. Given.
4. $\overline{RT} \cong \overline{QS}$	4. The diagonals of a rectangle are congruent. (3)
5. $\overline{QS} \cong \overline{SK}$ .	5. Transitive Property (2, 4)
6. $\triangle QSK$ is isosceles.	6. An isosceles triangle has two congruent sides. (5)

(31)

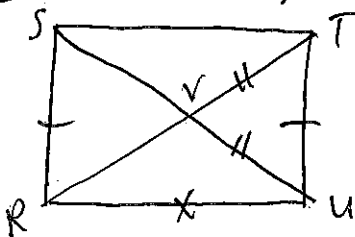


Given: Rectangle QRST  
Parallelogram RKST  
Parallelogram JQST

Prove:  $\overline{JT} \cong \overline{KS}$

Statements	Reasons
1. Parallelogram JQST	1. Given.
2. $\overline{JT} \cong \overline{QS}$	2. Opposite sides of a parallelogram are congruent. (1)
3. Rectangle QRST	3. Given.
4. $\overline{QS} \cong \overline{RT}$	4. The diagonals of a rectangle are congruent. (3)
5. $\overline{JT} \cong \overline{RT}$	5. Transitive Property. (2, 4)
6. Parallelogram RKST	6. Given.
7. $\overline{RT} \cong \overline{KS}$	7. Opposite sides of a parallelogram are congruent. (6)
8. $\overline{JT} \cong \overline{KS}$	8. Transitive Property. (5, 7)

(35) Thm: If the diagonals of a parallelogram are congruent, then the parallelogram is a rectangle.



Given: Parallelogram RSTU  
 $\overline{RT} \cong \overline{SU}$

Prove: RSTU is a rectangle.

Statements	Reasons
1. Parallelogram RSTU	1. Given.
2. $\overline{RS} \cong \overline{UT}$ ( $s \cong s$ )	2. Opposite sides of a parallelogram are congruent. (1)
3. $\overline{RV} \cong \overline{UV}$ ( $s \cong s$ )	3. Reflexive Property.
4. $\overline{RV} \cong \overline{TV}$ ( $s \cong s$ )	4. Given.
5. $\triangle RSU \cong \triangle UTR$	5. SSS Postulate. (2, 3, 4)
6. $\angle SRU \cong \angle TUR$	6. Corresponding parts of $\cong \triangle$ s are congruent. (5)
7. $\angle SRU \cong \angle STU$ , $\angle TUR \cong \angle TSR$	7. Opposite angles of a parallelogram are congruent. (4)
8. $\angle SRU \cong \angle TUR \cong \angle STU \cong \angle TSR$	8. Transitive Property. (6, 7)
9. RSTU is a rectangle.	9. A quadrilateral with 4 congruent interior angles is a rectangle. (8)