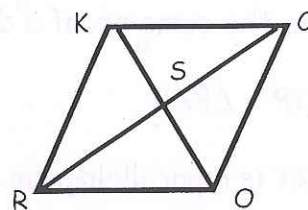


From the given information, state the definition or theorem that allows you to claim quadrilateral ROCK is a parallelogram.

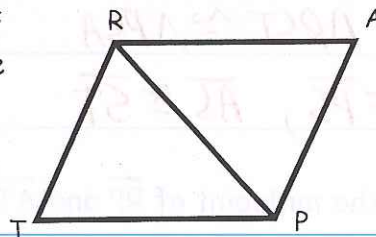


- 1) $\overline{OR} \cong \overline{CK}, \overline{OC} \cong \overline{RK}$
If 2 pairs of opposite sides are congruent, then it is a parallelogram.
- 2) $\overline{OR} \cong \overline{CK}, \overline{OR} \parallel \overline{CK}$
If one pair of sides is both congruent & parallel, then it is a parallelogram.
- 3) $KS = OS, CS = RS$
If diagonals bisect each other, then it is a parallelogram.
- 4) $\angle KCO \cong \angle ORK, \angle COR \cong \angle RKC$
If 2 pairs of opposite angles are congruent, then it is a parallelogram.

Complete the statements with **always**, **sometimes** or **never**.

- 5) The diagonals of a quadrilateral sometimes bisect each other.
- 6) If the measures of two angles of a quadrilateral are equal, then the quadrilateral is sometimes a parallelogram.
- 7) If one pair of opposite sides of a quadrilateral is congruent and parallel, then the quadrilateral is always a parallelogram.
- 8) To prove a quadrilateral is a parallelogram, it is never enough to show that one pair of opposite sides is parallel.

- 9) Prove PART is a parallelogram by proving both pairs of opposite sides are congruent. This proof will only take you 3 steps.



Given: $\triangle RTP \cong \triangle PAR$

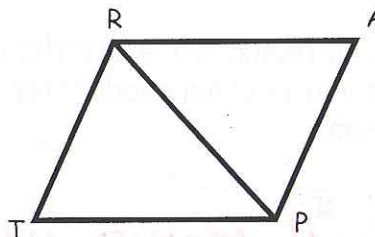
Prove: PART is a parallelogram

Statements	Reasons
1. $\triangle RTP \cong \triangle PAR$	1. Given
2. $\overline{RA} \cong \overline{PT}, \overline{RT} \cong \overline{AP}$	2. CPCTC
3. PART is a parallelogram.	3. If 2 pairs of opposite sides of a quadrilateral are congruent, then it's a parallelogram.

10) Complete the same proof a different way.

Given: $\triangle RTP \cong \triangle PAR$

Prove: PART is a parallelogram



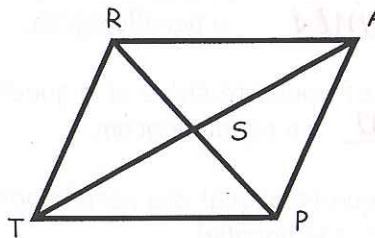
Statements
1. $\triangle RTP \cong \triangle PAR$
2. $\angle TRP \cong \angle APR$
3. $\overline{RT} \parallel \overline{PA}$
4. $\overline{RT} \cong \overline{PA}$
5. PART is a parallelogram

Reasons
1. Given
2. CPCTC
3. If alternate interior angles are congruent, then the lines are parallel.
4. CPCTC
5. If one pair of sides is both congruent and parallel, then it is a parallelogram.

11) Complete the same proof a different way.

Given: $\triangle RST \cong \triangle PSA$

Prove: PART is a parallelogram



Statements
1. $\triangle RST \cong \triangle PSA$
2. $\overline{RS} \cong \overline{PS}, \overline{AS} \cong \overline{ST}$
3. S is the midpoint of \overline{RP} and \overline{AT}
4. $\overline{RP}, \overline{AT}$ bisect each other
5. PART is a parallelogram

Reasons
1. Given
2. CPCTC
3. Definition of midpoint
4. Def. of segment bisector
5. If the diagonals bisect each other, then it is a parallelogram.

12) Identify the four ways to prove a quadrilateral is a parallelogram.

- opposite sides are congruent
- opposite angles are congruent
- diagonals bisect each other
- one pair of sides is both congruent and parallel