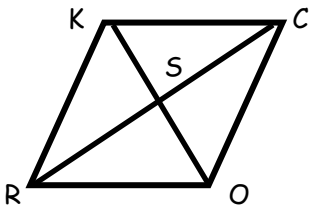
Geometry/Trig 2
5-2 Homework

Name _____
Date _____

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



1) $OR \cong CK$, $OC \cong RK$
If _____, then it is a parallelogram.

2) $OR \cong CK$, $OR \parallel CK$
If _____, then it is a parallelogram.

3) $KS = OS$, $CS = RS$
If _____, then it is a parallelogram.

4) $\angle KCO \cong \angle ORK$, $\angle COR \cong \angle RKC$
If _____, then it is a parallelogram.

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

5) The diagonals of a quadrilateral _____ bisect each other.

6) If the measures of two angles of a quadrilateral are equal, then the quadrilateral is _____ a parallelogram.

7) If one pair of opposite sides of a quadrilateral is congruent and parallel, then the quadrilateral is _____ a parallelogram.

8) To prove a quadrilateral is a parallelogram, it is _____ enough to show that one pair of opposite sides is parallel.

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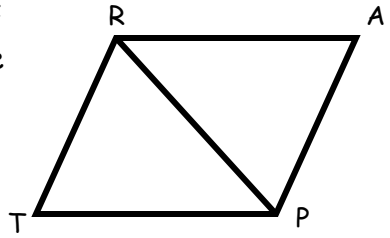
9) Prove PART is a parallelogram by proving both pairs of opposite sides are congruent. This proof will only take you 3 steps.

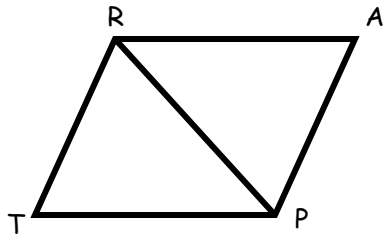


Given: $\Delta RTP \cong \Delta PAR$

Prove: PART is a parallelogram

Statements	Reasons

10) Complete the same proof a different way.

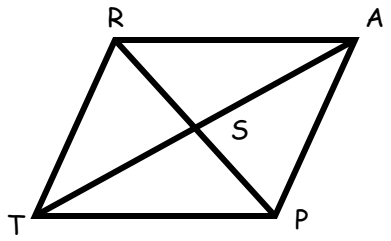


Given: $\Delta RTP \cong \Delta PAR$

Prove: PART is a parallelogram

Statements	Reasons
1. _____	1. _____
2. _____	2. _____
3. _____	3. If alternate interior angles are congruent, then the lines are parallel.
4. $RT \cong PA$	4. _____
5. _____	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: $\Delta RST \cong \Delta PSA$

Prove: PART is a parallelogram

Statements	Reasons
1. _____	1. _____
2. _____	2. _____
3. S is the midpoint of RP and AT	3. _____
4. _____	4. _____
5. _____	5. If the diagonals bisect each other, then it is a parallelogram.

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

- If _____, then it's a parallelogram.
- If _____, then it's a parallelogram.
- If _____, then it's a parallelogram.
- If _____, then it's a parallelogram.
- If _____, then it's a parallelogram.

(Also known as "Definition of a Parallelogram")