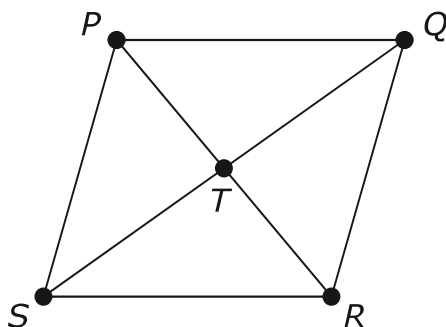




Use the information provided to answer Part A through Part D for question 37.

One method that can be used to prove that the diagonals of a parallelogram bisect each other is shown in the given partial proof.



Given: Quadrilateral $PQRS$ is a parallelogram

Prove:

$$PT = RT$$

$$ST = QT$$

Statements	Reasons
1. Quadrilateral $PQRS$ is a parallelogram	1. Given
2. $\overline{PQ} \parallel \overline{SR}$ $\overline{PS} \parallel \overline{QR}$	2. Definition of parallelogram
3. $\angle PQS \cong \angle RSQ$ $\angle QPR \cong \angle SRP$	3. ?
4. ?	4. Opposite sides of a parallelogram are congruent
5. $\triangle SRT \cong \triangle QPT$	5. ?
6. $\overline{PT} \cong \overline{RT}$ $\overline{ST} \cong \overline{QT}$	6. Corresponding parts of congruent triangles are congruent
7. $PT = RT$ $ST = QT$	7. Definition of congruent line segments

**37. Part A**

Which reason justifies the statement for step 3 in the proof?

- A. When two parallel lines are intersected by a transversal, same side interior angles are congruent.
- B. When two parallel lines are intersected by a transversal, alternate interior angles are congruent.
- C. When two parallel lines are intersected by a transversal, same side interior angles are supplementary.
- D. When two parallel lines are intersected by a transversal, alternate interior angles are supplementary.

Part B

Which statement is justified by the reason for step 4 in the proof?

- A. $\overline{PQ} \cong \overline{RS}$
- B. $\overline{PQ} \cong \overline{SP}$
- C. $\overline{PT} \cong \overline{TR}$
- D. $\overline{SQ} \cong \overline{PR}$

Part C

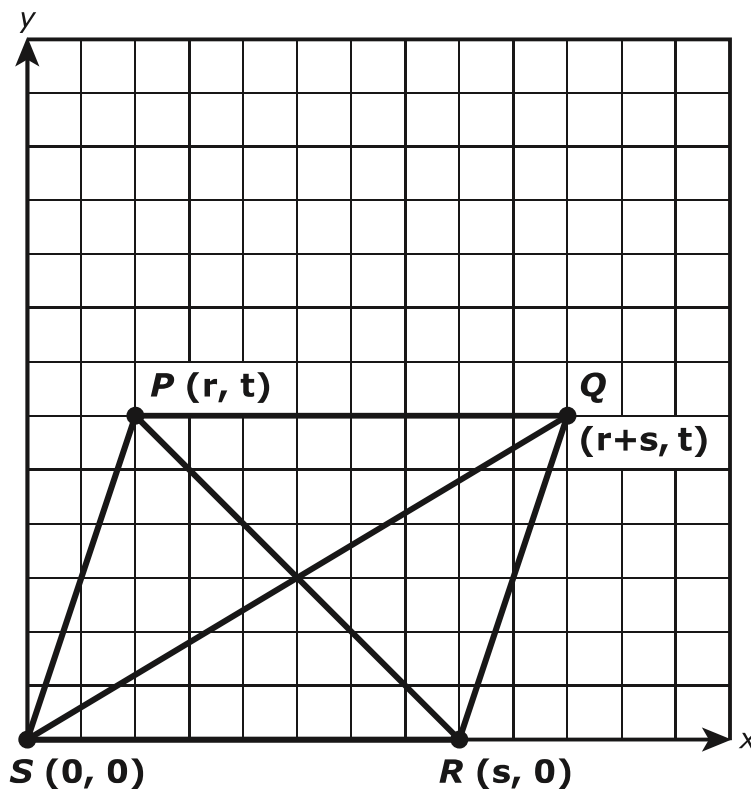
Which reason justifies the statement for step 5 in the proof?

- A. side-side-side triangle congruence
- B. side-angle-side triangle congruence
- C. angle-side-angle triangle congruence
- D. angle-angle-side triangle congruence



Part D

Another method of proving diagonals of a parallelogram bisect each other uses a coordinate grid.



What could be shown about the diagonals of parallelogram $PQRS$ to complete the proof?

- A. \overline{PR} and \overline{SQ} have the same length.
- B. \overline{PR} is a perpendicular bisector of \overline{SQ} .
- C. \overline{PR} and \overline{SQ} have the same midpoint.
- D. Angles formed by the intersection of \overline{PR} and \overline{SQ} each measure 90° .