



6-4 Mathematical Literacy and Vocabulary

Proving a Quadrilateral Is a Parallelogram

The converse of a statement reverses the conclusion and the hypothesis.

Statement: If A is true, then B is true.

Converse: If B is true, then A is true.

Hypothesis: A is true.

Hypothesis: B is true.

Conclusion: B is true.

Conclusion: A is true.

Example

Statement: If a number is 5 more than 7, then the number is 12.

Converse: If a number is 12, then the number is 5 more than 7.

For each statement below, circle the hypothesis and underline the conclusion. Then write the converse.

1. If an apple is red, then the apple is ripe.

2. If the tree has leaves, then the season is summer.

3. Complete the converse of this statement: If water is solid, then it is frozen.

Converse: If _____, then _____.

The converse of a theorem reverses the conclusion and the hypothesis.

Example

Theorem: If a transversal intersects two parallel lines, then corresponding angles are congruent.

Converse: If two lines and a transversal form corresponding angles that are congruent, then the two lines are parallel.

Match each theorem from Section A with its converse in Section B.

Section A

4. If a quadrilateral is a parallelogram, then both pairs of opposite sides are congruent.
5. If a quadrilateral is a parallelogram, then its diagonals bisect each other.
6. If a quadrilateral is a parallelogram, then both pairs of opposite angles are congruent.

Section B

- If the diagonals of a quadrilateral bisect each other, then the quadrilateral is a parallelogram.
- If both pairs of opposite angles of a quadrilateral are congruent, then the quadrilateral is a parallelogram.
- If both pairs of opposite sides of a quadrilateral are congruent, then the quadrilateral is a parallelogram.