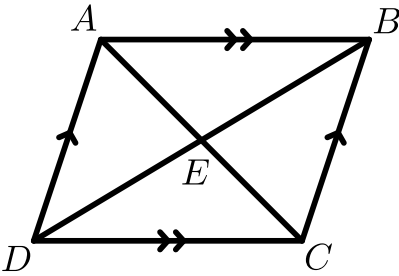
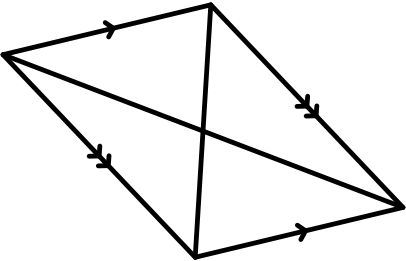
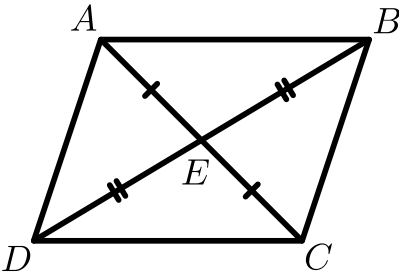


# Parallelogram Diagonals Theorem

## Examples & Non-Examples

Example	Example	Non-Example
 <p data-bbox="110 613 553 722"><i>Since quadrilateral ABCD is a parallelogram, then the diagonals must bisect each other.</i></p>	 <p data-bbox="591 613 1034 722"><i>Since the quadrilateral is a parallelogram, then the diagonals must bisect each other.</i></p>	 <p data-bbox="1065 613 1479 722"><i>Since the diagonals bisect each other, quadrilateral ABCD must be a parallelogram.</i></p>

## Statement

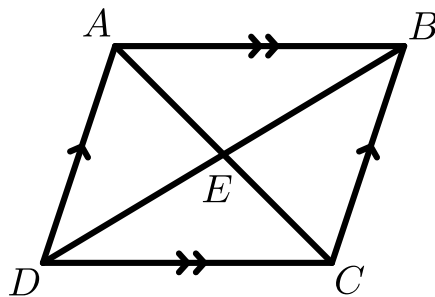
If a quadrilateral is a parallelogram, then the diagonals of the quadrilateral bisect each other.

### In simple terms:

In a shape is a parallelogram, then each diagonal must cut the other exactly in half.

### Example:

Since  $ABCD$  is a parallelogram, and diagonals  $AC$  and  $BD$  intersect at point  $E$ , then  $AE = CE$  and  $BE = DE$ .



### Why It Matters:

This property is often used to prove a quadrilateral is a parallelogram or to solve for unknown segment lengths.

