

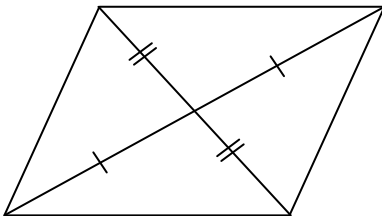
Proving that a Quadrilateral is a Parallelogram

The definition of a parallelogram gives one way to prove that a quadrilateral is a parallelogram (show both pair of opposite sides are parallel). Complete the following theorems which provide four more ways.

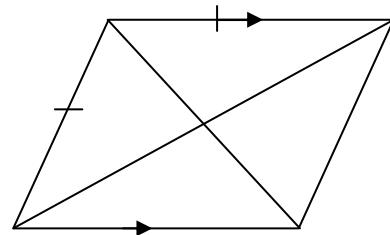
- 1) If both pairs of opposite sides of a quadrilateral are _____, then the quadrilateral is a parallelogram.
- 2) If one pairs of opposite sides of a quadrilateral are both _____ and _____, then the quadrilateral is a parallelogram.
- 3) If both pairs of opposite angles of a quadrilateral are _____, then the quadrilateral is a parallelogram.
- 4) If the _____ of a quadrilateral bisect each other, then the quadrilateral is a parallelogram.

Decide whether each quadrilateral is a parallelogram. If the answer is yes, state the definition or theorem that applies.

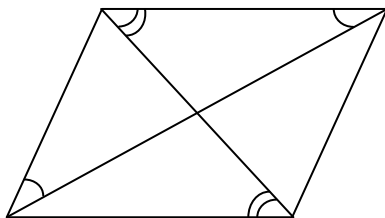
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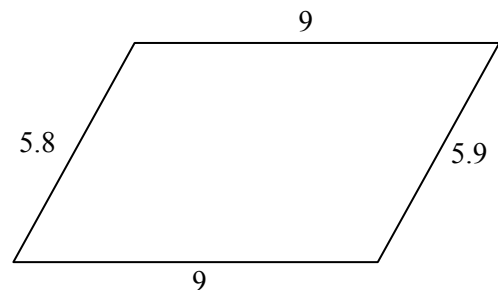
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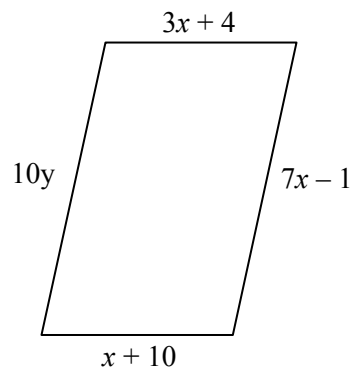


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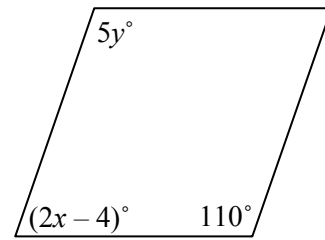


Find the values of x and y that make the quadrilateral a parallelogram.

9)



10)



11)

