

## Flashcards: Proving a Quadrilateral is a Parallelogram

Directions: Answer the following questions.

1. Is the following quadrilateral a parallelogram? Why or why not? The four sided figure has two sides that are marked parallel and both measure 6 inches.
2. Is the following quadrilateral a parallelogram? Why? The four sided figure has diagonals drawn with one part of one diagonal labeled 4 and the other part of the same diagonal also labeled 4.
3. What is the reason for step A in the proof shown below?

Quadrilateral ABCD with diagonals intersecting at point M

Given:

Angle BAD is congruent to angle BCD

Angle ADC is congruent to angle ABC

Prove:

Segment DM is congruent to segment MB

Statements	Reasons
Angle BAD is congruent to angle BCD Angle ADC is congruent to angle ABC	Given
ABCD is a parallelogram	A
M is the midpoint of DB	B
Segment DM is congruent to segment MB	Definition of midpoint.

4. What is the reason for step B in the proof shown below?

Quadrilateral ABCD with diagonals intersecting at point M

Given:

Angle BAD is congruent to angle BCD

Angle ADC is congruent to angle ABC

Prove:

Segment DM is congruent to segment MB

Statements	Reasons
Angle BAD is congruent to angle BCD Angle ADC is congruent to angle ABC	Given
ABCD is a parallelogram	A
M is the midpoint of DB	B

Segment DM is congruent to segment MB	Definition of midpoint.
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Answers:

1. A quadrilateral with opposite sides that are parallel and congruent is a parallelogram.
2. No, we must know that both diagonals are bisected.
3. If both pairs of opposite angles in a quadrilateral are congruent, then it is a parallelogram
4. The diagonals of a parallelogram bisect each other.