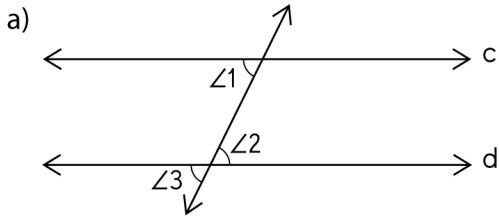


# Proving Parallel Lines Worksheet

① Prove the lines c and d are parallel.



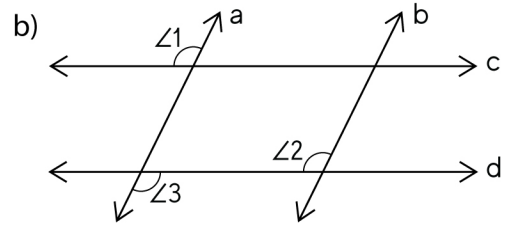
Given:  $\angle 1 = \angle 2$

Statements

1. \_\_\_\_\_
2.  $\angle 2 = \angle 3$
3. \_\_\_\_\_
4. \_\_\_\_\_

Reasons

1. \_\_\_\_\_
2. \_\_\_\_\_
3. Transitive property of congruence.
4. \_\_\_\_\_  
\_\_\_\_\_



Given:  $\angle 1 = \angle 2$ ,  $a \parallel b$

Statements

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

Reasons

1. \_\_\_\_\_
2. Alternate interior angles theorem.
3. \_\_\_\_\_  
\_\_\_\_\_
4. Converse of alternate exterior angles theorem.

② Write the converse of the corresponding angles theorem.

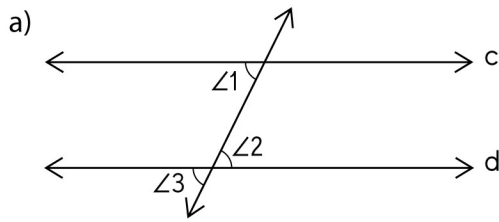
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# Proving Parallel Lines Worksheet

①



Given:  $\angle 1 = \angle 2$

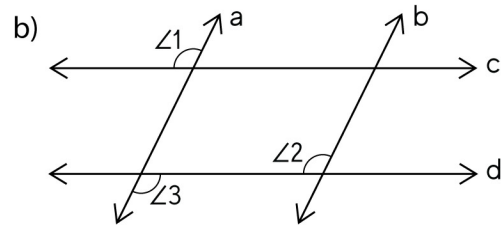
## Statements

1.  $\angle 1 = \angle 2$
2.  $\angle 2 = \angle 3$
3.  $\angle 1 = \angle 3$
4.  $c \parallel d$

## Reasons

1. Given
2. Vertical angles theorem
3. Transitive property of congruence.
4. Converse of the corresponding angles theorem.

## Answers



Given:  $\angle 1 = \angle 2, a \parallel b$

## Statements

1.  $\angle 1 = \angle 2, a \parallel b$
2.  $\angle 2 = \angle 3$
3.  $\angle 1 = \angle 3$
4.  $c \parallel d$

## Reasons

1. Given
2. Alternate interior angles theorem.
3. Transitive property of congruence.
4. Converse of alternate exterior angles theorem.

②

If two lines are cut by a transversal such that corresponding angles are congruent, then  
the lines are parallel.