REVIEW: Parallel Lines and Transversals

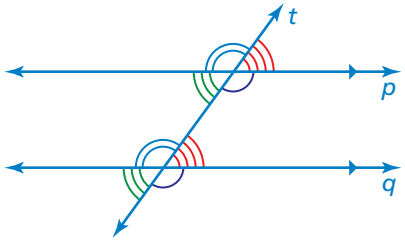
Name _____

Key Concept and Vocabulary

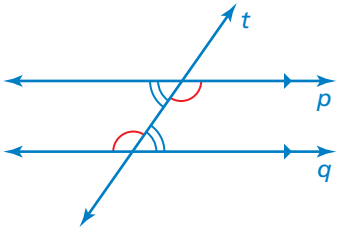
A line that intersects two or more lines is called a **transversal.**

When a transversal intersects parallel lines, corresponding angles are congruent. Corresponding angles lie on the same side of the transversal in corresponding positions.

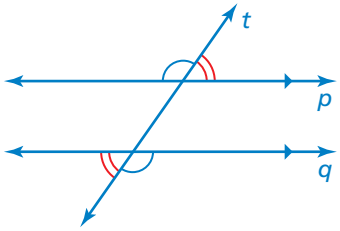
When a transversal intersects parallel lines, alternate interior angles are congruent and alternate exterior angles are congruent.



Corresponding angles



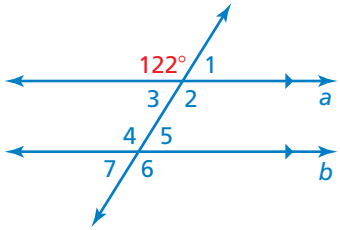
Alternate interior angles



Alternate exterior angles

Skill Example

1.



$\angle 6$: $\angle 6$ and the 122° angle are alternate exterior angles. They are congruent. So, the measure of $\angle 6$ is 122°.

$\angle 3$: $\angle 3$ and the 122° angle are supplementary angles. So, the measure of $\angle 3$ is $180° - 122° = 58°$.

$\angle 5$: $\angle 5$ and $\angle 3$ are alternate interior angles. They are congruent. So, the measure of $\angle 5$ is 58°.

$\angle 1$, $\angle 2$, $\angle 4$, and $\angle 7$: Using corresponding angles, the measures of $\angle 1$ and $\angle 7$ are 58°, and the measures of $\angle 2$ and $\angle 4$ are 122°.

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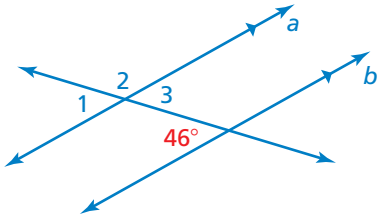
Check your answers at BigIdeasMath.com.

Use the given angle to find the measures of the numbered angles. Explain your reasoning.

2.

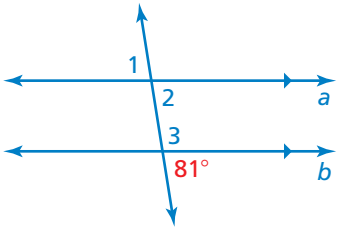


$\angle 1$: 46°; corresponding angles

$\angle 2$: 134°; supplementary angles

$\angle 3$: 46°; alternate interior angles

3.



$\angle 1$: 81°; alternate exterior angles

$\angle 2$: 81°; corresponding angles

$\angle 3$: 99°; supplementary angles