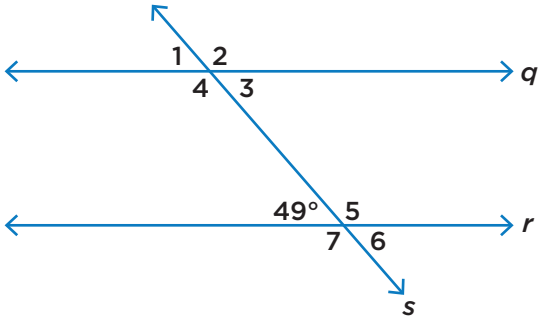
Name ANSWER KEY Date

Transversals of Parallel Lines | ANGLE RELATIONSHIPS

Using the diagrams below, find the missing angle measures. Then explain how you found some of the angle measures. Be sure to name the angle relationships that help you justify your answers.

In this diagram, lines *q* and *r* are parallel.



$m\angle 1 =$ 49° $m\angle 2 =$ 131°

$m\angle 3 =$ 49° $m\angle 4 =$ 131°

$m\angle 5 =$ 131° $m\angle 6 =$ 49°

$m\angle 7 =$ 131°

Explanations may vary.

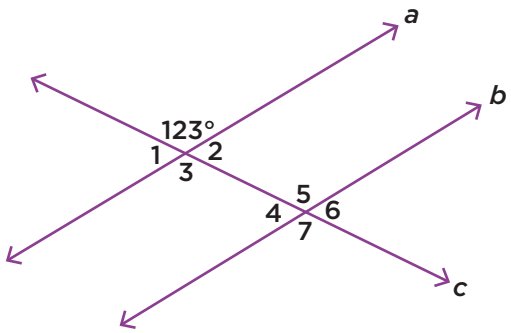
Explain how you found $m\angle 3$.

The angle labeled 49° and ∠3 are alternate interior angles, so they are congruent.

Explain how you found $m\angle 4$.

The angle labeled 49° and ∠4 are same-side interior angles, so they are supplementary. Also, ∠3 and ∠4 are supplementary.

In this diagram, lines *a* and *b* are parallel.



$m\angle 1 =$ 57° $m\angle 2 =$ 57°

$m\angle 3 =$ 123° $m\angle 4 =$ 57°

$m\angle 5 =$ 123° $m\angle 6 =$ 57°

$m\angle 7 =$ 123°

Explanations may vary.

Explain how you found $m\angle 5$.

The angle labeled 123° and ∠5 are corresponding angles, so they are congruent.

Explain how you found $m\angle 7$.

The angle labeled 123° and ∠7 are alternate exterior angles, so they are congruent. Also, ∠5 and ∠7 are vertical angles, so they are congruent.