WORKSHEET MATHEMATICS

Relationships Between Angles on Two Parallel Lines

Name : _____

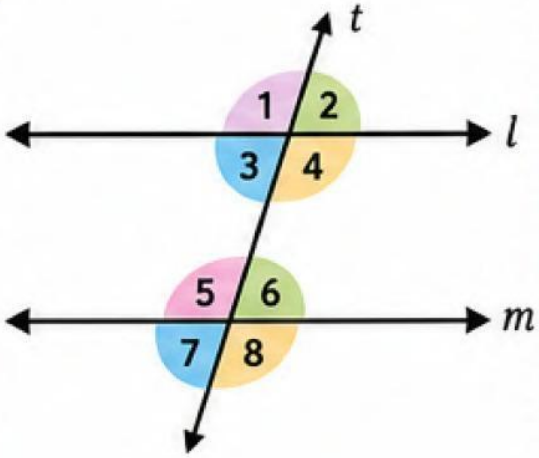
Class : _____

Date : _____

LET'S OBSERVE!

Look at the figure on the right.

Which angles look equal?



They are cut by a transversal! Let's find out!

Answer the questions below based on the figure above.

1. Which angles appear to be equal? Why?

   Answer: _____

   _____

2. Which angles are next to each other (adjacent)?

   Answer: _____

   _____

Remember!

When two parallel lines are cut by a transversal, several angles are formed. These angles have special relationships.

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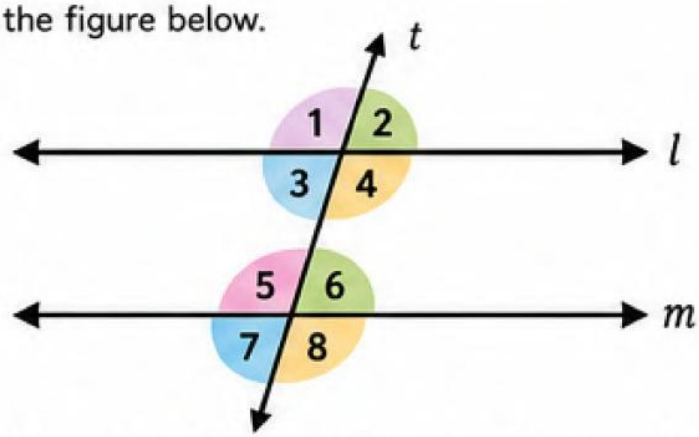
UNDERSTAND THE CONCEPT

Look at the figure below.



Here are the relationships between angles on two parallel lines.

1 Corresponding Angles

Angles in the same position at each intersection are equal.

Examples:

$\angle 1 = \angle 5$, $\angle 2 = \angle 6$

$\angle 3 = \angle 7$, $\angle 4 = \angle 8$

Equal

2 Alternate Interior Angles

Angles that are inside the parallel lines and on opposite sides of the transversal are equal.

Examples:

$\angle 3 = \angle 6$

$\angle 4 = \angle 5$

Equal

3 Alternate Exterior Angles

Angles that are outside the parallel lines and on opposite sides of the transversal are equal.

Examples:

$\angle 1 = \angle 8$

$\angle 2 = \angle 7$

Equal

4 Same-Side (Consecutive) Interior Angles

Angles that are inside the parallel lines and on the same side of the transversal are supplementary.

Examples:

$\angle 3 + \angle 5 = 180°$

$\angle 4 + \angle 6 = 180°$

Sum is 180°

Key Point!

Corresponding, Alternate Interior, and Alternate Exterior Angles are equal.
Same-Side Interior Angles are supplementary (add up to 180°).

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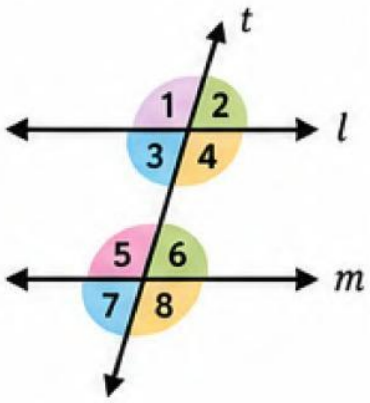
PRACTICE TIME!

1 Match It!

Draw a line to match each angle with its equal angle.

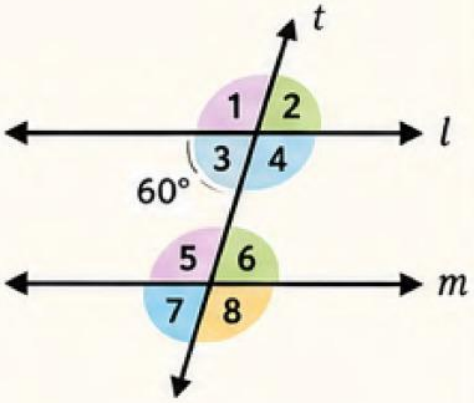
∠1	∠6
∠2	∠8
∠3	∠5
∠4	∠7
∠5	∠1
∠7	∠2
∠8	∠4



2 Think and Solve!

In the figure, ∠3 = 60°.
Find the measure of each angle.

a. ∠1 = _____
b. ∠2 = _____
c. ∠4 = _____
d. ∠5 = _____
e. ∠6 = _____
f. ∠7 = _____
h. ∠8 = _____



3 Apply Your Knowledge!

If ∠2 = 115°, determine whether each statement is True (✓) or False (✗).

		True	False
a.	∠6 = 115°	☐	☐
b.	∠4 = 65°	☐	☐
c.	∠5 = 115°	☐	☐
d.	∠7 = 65°	☐	☐
e.	∠3 + ∠5 = 180°	☐	☐

Great job!

Keep learning and you will go far!

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