

What you will learn about:
Parallel lines and Angles

Supplementary Angles

2 angles whose measures add up to 180°

Complementary Angles

2 angles whose measures add up to 90°

Vertical Angles - Non Adjacent angles formed by intersecting lines



Linear Pairs

Adjacent angles that are supplementary

Parallel Lines - Lines in the same plane that never intersect.

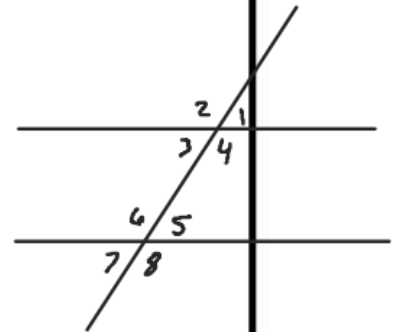
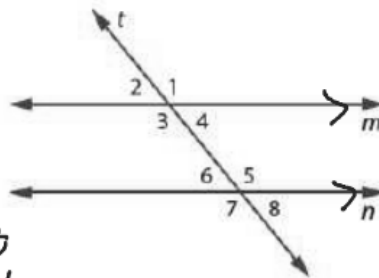
Transversal - A Line that intersects 2 or more lines at different points

Congruent - Same measure



Adjacent Angles - Next to each other

In the diagram below $m \parallel n$ with transversal t .



- In the preceding diagram, the angles at each point of intersection are numbered so that they can be easily identified.

- What pairs of angles, if any appear to be equal in measure?

$\angle 1 \cong \angle 5$ $\angle 2 \cong \angle 4$ $\angle 1 \cong \angle 7$ $\angle 4 \cong \angle 8$
 $\angle 2 \cong \angle 8$ $\angle 3 \cong \angle 7$ $\angle 5 \cong \angle 3$ $\angle 2 \cong \angle 6$
 $\angle 1 \cong \angle 3$ $\angle 7 \cong \angle 5$ $\angle 6 \cong \angle 8$ $\angle 6 \cong \angle 4$

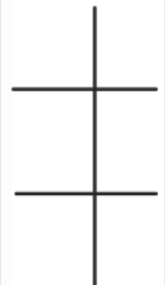
- What angle pairs appear to be supplementary? (Supplementary angles need not be linear pairs.)

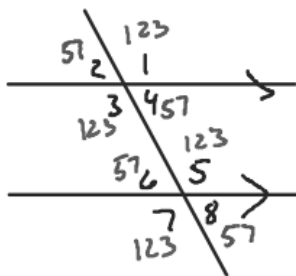
$\angle 2, \angle 7$ $\angle 2, \angle 5$ $\angle 1, \angle 6$ $\angle 3, \angle 8$ $\angle 1, \angle 8$
 $\angle 4, \angle 7$ $\angle 6, \angle 3$ $\angle 4, \angle 5$

- Draw another pair of parallel lines and a transversal with a different slope from the one above. Number the angles as in the figure above.

- Do the same pairs of numbered angles appear to be equal in measure?

- Do the same pairs of numbered angles appear to be supplementary?





Angles that are in the same relative position with respect to each parallel line and the transversal are called **Corresponding Angles**. In the diagram on the previous page angles 1 and 5 are corresponding angles.

2. Examine the diagram you drew for Part C of Problems 1.

- Name 3 other pairs of corresponding angles besides angles 1 and 5. $\angle 3, \angle 7$ $\angle 8, \angle 4$ $\angle 2, \angle 6$
- Suppose $m\angle 1 = 123^\circ$ (read the measure of angle 1 is 123 degrees.) Find the measure of as many other angles as you can in your diagram.

Assuming all lines that look parallel are parallel.

Find the value of x .

