

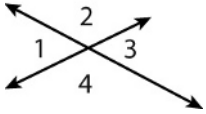
**LESSON**  
**9-1**

# Angle Relationships

## Success for English Learners

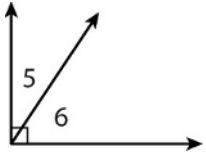
### Problem 1

Vertical angles



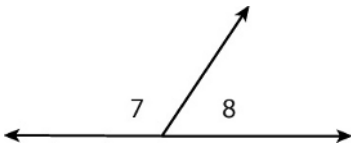
$\angle 1$  and  $\angle 3$  are vertical angles.  
 $\angle 2$  and  $\angle 4$  are vertical angles.  
 Vertical angles have the same measure.

Complementary angles



$\angle 5$  and  $\angle 6$  are complementary angles.  
 Complementary angles have a sum of  $90^\circ$ .

Supplementary angles



$\angle 7$  and  $\angle 8$  are supplementary angles.  
 Supplementary angles have a sum of  $180^\circ$ .

### Problem 2

What is  $m\angle x$ ?

$$\begin{aligned}
 25^\circ + 37^\circ + x &= 180^\circ \\
 62^\circ + x &= 180^\circ \\
 \underline{-62^\circ} \quad \underline{-62^\circ} \\
 x &= 118^\circ
 \end{aligned}$$

1. What is the sum of complementary angles? supplementary angles?

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2. What is the sum of the measures of the angles in any triangle?

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