

Name \_\_\_\_\_ Date \_\_\_\_\_

# Angles (pages 352–355)

The lines that form the **edges** of a box meet at a point called the **vertex**. Two lines that meet at a vertex form an **angle**. Angles are measured in **degrees**, or parts of a circle. A circle contains 360 degrees. You can measure the degrees in an angle with a **protractor**.

<b>Classifying Angles</b>	<ul style="list-style-type: none"> <li>• Acute angles measure between <math>0^\circ</math> and <math>90^\circ</math>.</li> <li>• Obtuse angles measure between <math>90^\circ</math> and <math>180^\circ</math>.</li> <li>• Right angles measure <math>90^\circ</math>.</li> <li>• Complementary angles are two angles whose measures add to <math>90^\circ</math>.</li> <li>• Supplementary angles are two angles whose measures add to <math>180^\circ</math>.</li> </ul>
---------------------------	---

## EXAMPLES

**A** An angle measures  $179^\circ$ .  
Is it acute, right, or obtuse?  
*This angle measures between  $90^\circ$  and  $180^\circ$ , so it is obtuse.*

**B** Angles  $F$  and  $G$  are complementary angles. Find  $m\angle G$  if  $m\angle F$  is  $31^\circ$ .  
 $m\angle G + m\angle F = 90^\circ$   
 $m\angle G + 31^\circ = 90^\circ$   
 $m\angle G = 59^\circ \quad 59 + 31 = 90$

### Try These Together

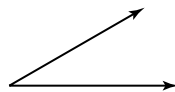
1. An angle measures  $29^\circ$ . Is it acute, right, or obtuse?  
*HINT: Is  $29^\circ$  less than  $90^\circ$ ?*

2. Angles  $K$  and  $L$  are supplementary angles. Find  $m\angle K$  if  $m\angle L$  is  $42^\circ$ .  
*HINT: What is the sum of  $m\angle K$  and  $m\angle L$ ?*

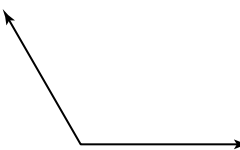
## PRACTICE

Use a protractor to find the measure of each angle.

3.



4.



Classify each angle measure as acute, right, or obtuse.

5.  $45^\circ$ 6.  $100^\circ$ 7.  $90^\circ$ 8.  $20^\circ$ 

9. Are two angles with the measures  $120^\circ$  and  $60^\circ$  *complementary*, *supplementary*, or *neither*?

10. **Architecture** An architect is designing a building. A corner in a hallway has an angle that measures  $135^\circ$ . Is the angle *acute*, *right*, or *obtuse*?



11. **Standardized Test Practice** Angle  $p$  and angle  $q$  are complementary. Find  $m\angle p$  if  $m\angle q$  is  $45^\circ$ .

**A**  $55^\circ$ **B**  $45^\circ$ **C**  $135^\circ$ **D**  $145^\circ$ 

Answers: 1. acute 2.  $138^\circ$  3.  $30^\circ$  4.  $120^\circ$  5. acute 6. obtuse 7. right 8. acute 9. supplementary 10. obtuse 11. B