

# Section Overview

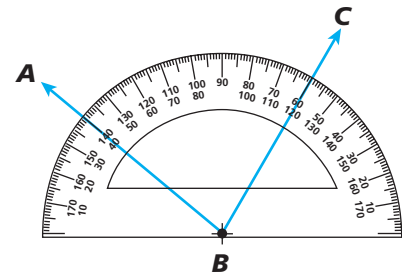


## Angle Measures in Polygons

Lesson 9-6

**Why?** Use a protractor to find the measure of  $\angle ABC$ . Then classify the angle.

- Place the center point of the protractor on the vertex of the angle.
- Read the measures where ray  $BA$  and ray  $BC$  cross.
- Ray  $BA$  crosses at  $40^\circ$ , and ray  $BC$  crosses at  $120^\circ$ .
- The measure of  $\angle ABC$  is  $120^\circ - 40^\circ$ , or  $80^\circ$ . Write this as  $m\angle ABC = 80^\circ$ .
- Since  $80^\circ < 90^\circ$ , the angle is acute.



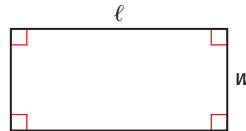
$$m\angle ABC \text{ is } 120^\circ - 40^\circ = 80^\circ$$

## Finding Perimeter

Lesson 9-7

**Why?** You would need to find the perimeter of your backyard to know how much fencing is needed to enclose it.

The **perimeter** of a figure is the distance around it.

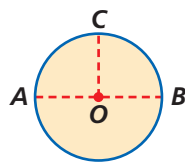


The formula for the **perimeter of a rectangle** is  $P = 2l + 2w$ .

## Circles and Circumference

Lesson 9-8

**Why?** The shape of a bicycle wheel is a circle. The size of tires and inner tubes are given by their diameters.



The circle is circle  $O$ .  
 $\overline{AB}$  is a diameter.  
 $\overline{OA}$ ,  $\overline{OB}$ , and  $\overline{OC}$  are radii.

**Circumference of a Circle**  
 the distance around a circle

$$C = \pi d, \text{ or } C = 2\pi r$$

Find the circumference of a circle with radius 5 cm.

$$C = 2\pi r$$

$$C = 2\pi 5$$

$$C = 10\pi \text{ cm}$$

Pi is the ratio of the circumference to the diameter,  $\frac{C}{d}$ , for any circle. This ratio is represented by the Greek letter  $\pi$ , which is read as "pi."  $\frac{C}{d} = \pi$

The decimal representation of **pi** starts with 3.14159265 . . . and goes on forever without a repeating pattern. We approximate **pi** using either 3.14 or  $\frac{22}{7}$ .