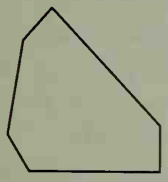
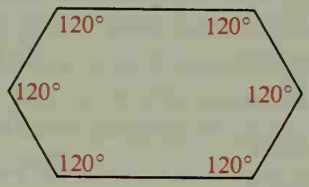
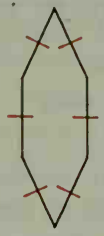
Polygons can be equiangular or equilateral. If a polygon is both equiangular and equilateral, it is called a **regular polygon.**



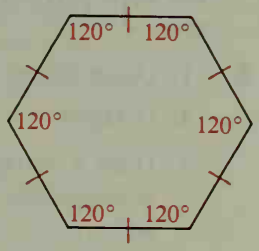
Hexagon that is neither equiangular nor equilateral



Equiangular hexagon



Equilateral hexagon



Regular hexagon

Example 2 A regular polygon has 12 sides. Find the measure of each interior angle.

Solution 1 Interior angle sum = $(12 - 2)180 = 1800$
Each of the 12 congruent interior angles has measure $1800 \div 12$, or 150.

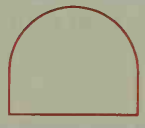
Solution 2 Each exterior angle has measure $360 \div 12$, or 30.
Each interior angle has measure $180 - 30$, or 150.

Classroom Exercises

Is the figure a convex polygon, a nonconvex polygon, or neither?

1. 

2. 

3. 

4. 

5. 

6. 

7. Imagine stretching a rubber band around each of the figures in Exercises 1–6. What is the relationship between the rubber band and the figure when the figure is a convex polygon?

8. A polygon has 102 sides. What is the interior angle sum? the exterior angle sum?

9. Complete the table for regular polygons.

Number of sides	6	10	20	?	?	?	?
Measure of each ext. ∠	?	?	?	10	20	?	?
Measure of each int. ∠	?	?	?	?	?	179	90