

**LESSON  
8.1****Practice A**

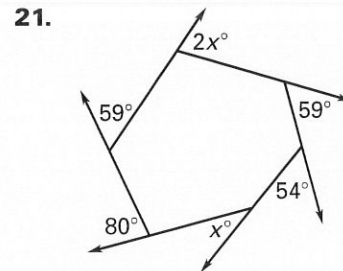
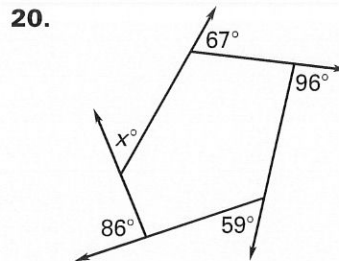
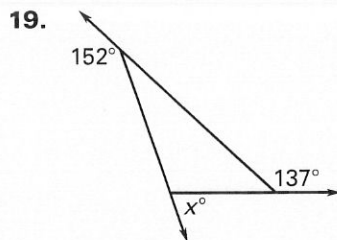
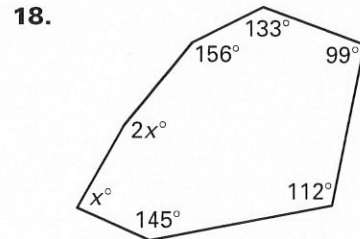
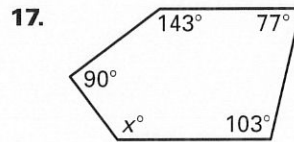
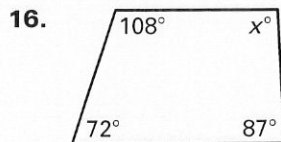
For use with the lesson "Find Angle Measures in Polygons"

**Find the sum of the measures of the interior angles of the indicated convex polygon.**

- |            |           |           |
|------------|-----------|-----------|
| 1. Decagon | 2. 13-gon | 3. 17-gon |
| 4. 18-gon  | 5. 22-gon | 6. 25-gon |
| 7. 30-gon  | 8. 34-gon | 9. 39-gon |

**The sum of the measures of the interior angles of a convex polygon is given. Classify the polygon by the number of sides.**

- |                  |                  |                  |
|------------------|------------------|------------------|
| 10. $1260^\circ$ | 11. $2160^\circ$ | 12. $3240^\circ$ |
| 13. $4680^\circ$ | 14. $5400^\circ$ | 15. $7560^\circ$ |

**Find the value of  $x$ .**

22. The measures of the interior angles of a convex quadrilateral are  $x^\circ$ ,  $2x^\circ$ ,  $4x^\circ$ , and  $5x^\circ$ . What is the measure of the largest interior angle?
23. The measures of the exterior angles of a convex pentagon are  $2x^\circ$ ,  $4x^\circ$ ,  $6x^\circ$ ,  $8x^\circ$ , and  $10x^\circ$ . What is the measure of the smallest exterior angle?

**Find the measures of an interior angle and an exterior angle of the indicated regular polygon.**

- |                     |                     |                    |
|---------------------|---------------------|--------------------|
| 24. Regular hexagon | 25. Regular decagon | 26. Regular 15-gon |
| 27. Regular 20-gon  | 28. Regular 30-gon  | 29. Regular 36-gon |

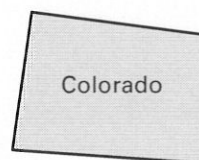
**LESSON**  
**8.1**
**Practice A** *continued*
*For use with the lesson "Find Angle Measures in Polygons"*

**In Exercises 30–37, find the value of  $n$  for each regular  $n$ -gon described.**

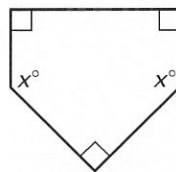
30. Each interior angle of the regular  $n$ -gon has a measure of  $90^\circ$ .
31. Each interior angle of the regular  $n$ -gon has a measure of  $108^\circ$ .
32. Each interior angle of the regular  $n$ -gon has a measure of  $135^\circ$ .
33. Each interior angle of the regular  $n$ -gon has a measure of  $144^\circ$ .
34. Each exterior angle of the regular  $n$ -gon has a measure of  $90^\circ$ .
35. Each exterior angle of the regular  $n$ -gon has a measure of  $60^\circ$ .
36. Each exterior angle of the regular  $n$ -gon has a measure of  $40^\circ$ .
37. Each exterior angle of the regular  $n$ -gon has a measure of  $30^\circ$ .

38. **Geography** The shape of Colorado can be approximated by a polygon, as shown.

- a. How many sides does the polygon have? Classify the polygon.
- b. What is the sum of the measures of the interior angles of the polygon?
- c. What is the sum of the measures of the exterior angles of the polygon?



39. **Softball** A home plate marker for a softball field is a pentagon, as shown. Three of the interior angles of the pentagon are right angles and the remaining two interior angles are congruent. What is the value of  $x$ ?



40. **Stained Glass Window** Part of a stained-glass window is a regular octagon, as shown. Find the measure of an interior angle of the regular octagon. Then find the measure of an exterior angle.

