

Name \_\_\_\_\_

Date \_\_\_\_\_

LESSON 8.1

**Practice C**

*For use with pages 506–513*

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

1. 21-gon

2. 35-gon

3. 50-gon

**The sum of the measures of the interior angles of a convex polygon is given.**

**Classify the polygon by the number of sides.**

4.  $1440^\circ$

5.  $3060^\circ$

6.  $3780^\circ$

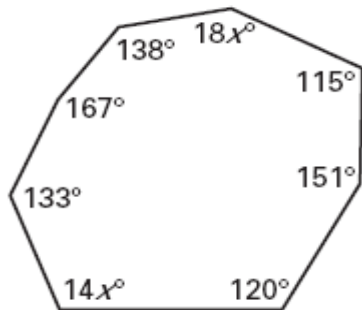
7.  $6480^\circ$

8.  $8100^\circ$

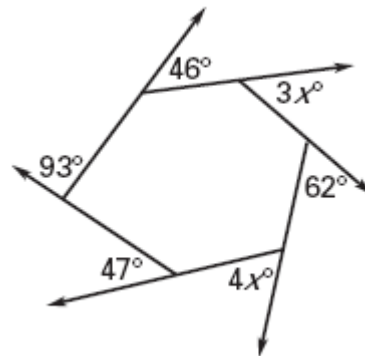
9.  $8820^\circ$

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

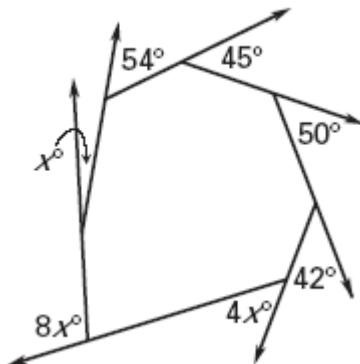
10.



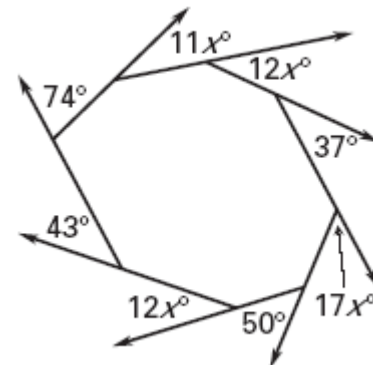
11.



12.



13.



14. What is the measure of each interior angle of a regular nonagon?
15. The measures of the exterior angles of a convex hexagon are  $45^\circ$ ,  $60^\circ$ ,  $x^\circ$ ,  $3x^\circ$ ,  $7x^\circ$ , and  $90^\circ$ . What is the measure of the largest exterior angle?
16. The measures of the interior angles of a convex decagon are  $150^\circ$ ,  $145^\circ$ ,  $130^\circ$ ,  $34x^\circ$ ,  $35x^\circ$ ,  $135^\circ$ ,  $160^\circ$ ,  $120^\circ$ ,  $30x^\circ$ , and  $21x^\circ$ . What is the measure of the smallest interior angle?

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

17. Regular heptagon
18. Regular dodecagon
19. Regular 70-gon
20. Regular 125-gon

**In Exercises 21-24, find the value of  $n$  for each regular  $n$ -gon described.**

21. Each interior angle of the regular  $n$ -gon has a measure of  $165^\circ$ .
22. Each interior angle of the regular  $n$ -gon has a measure of  $177.6^\circ$ .
23. Each exterior angle of the regular  $n$ -gon has a measure of  $5^\circ$ .
24. Each exterior angle of the regular  $n$ -gon has a measure of  $12^\circ$ .

**Determine if it is possible for a regular polygon to have an interior angle with the given angle measure. *Explain* your reasoning.**

25.  $155^\circ$
26.  $160^\circ$
27.  $175^\circ$
28.  $168^\circ$