LESSON 11.1

NAME Key DATE _____

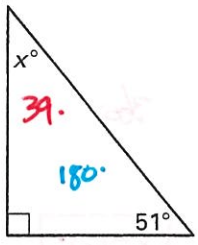
Practice B

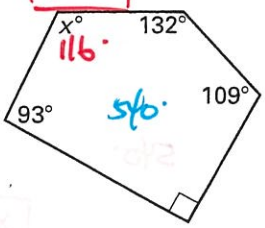
For use with pages 661–668

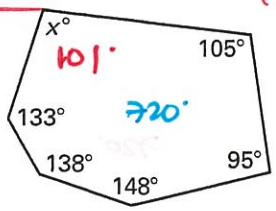
Find the sum of the measures of the interior angles of the convex polygon.

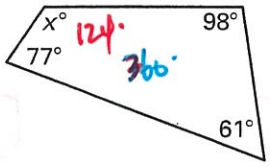
1. pentagon (5-2)·180, 3·180, 540°
2. nonagon (9-2)·180, 7·180, 1260°
3. 13-gon (13-2)·180, 11·180, 1980°
4. 18-gon (18-2)·180, 16·180, 2880°

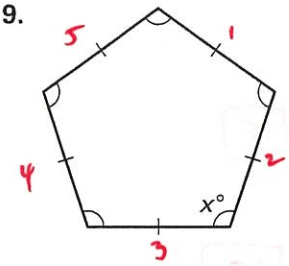
Find the value of *x*.

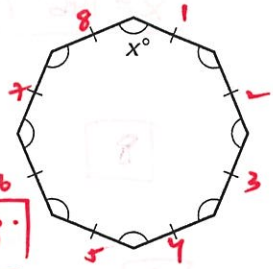
5. 

6. 

7. 

8. 

9. 

10. 

(5-2)·180, 3·180, 540°, 540/5 = 108°
(8-2)·180, 6·180, 1080, 1080/8 = 135°

You are given the measure of each interior angle of a regular *n*-gon. Find the value of *n*.

11. 108° 5
12. $128\frac{4}{7}°$ 7
13. 150° 12
14. 162° 20

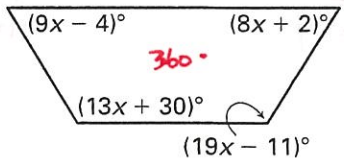
Find the sum of the measures of the exterior angles of the convex polygon.

15. pentagon 360°
16. nonagon 360°
17. 15-gon 360°
18. 20-gon 360°

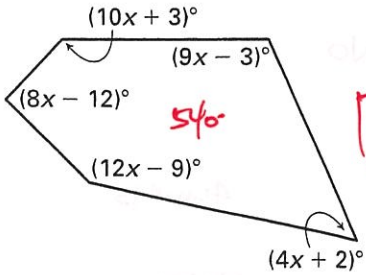
You are given the measure of each exterior angle of a regular *n*-gon. Find the value of *n*.

19. 72° 5
20. 45° 8
21. 20° 18
22. 15° 24

Find the value of *x*.

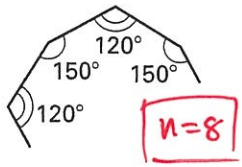
23. 

x = 7

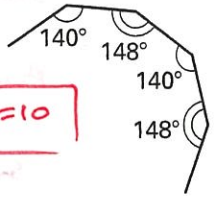
24. 

x = 13

You are shown part of a convex *n*-gon. The pattern of the congruent angles continues around the polygon. Find *n*.

25. 

n = 8

26. 

n = 10

Lesson 11.1

LESSON 11.1

NAME Key DATE

Practice C

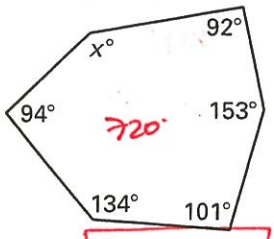
For use with pages 661–668

Lesson 11.1

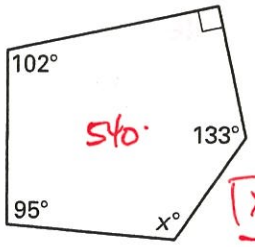
Find the sum of the measures of the interior angles of the convex polygon.

1. heptagon 900°
2. decagon 1440°
3. 16-gon 2520°
4. 24-gon 3960°

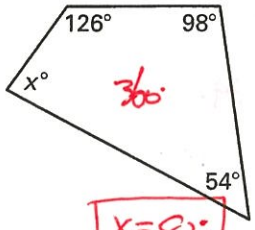
Find the value of *x*.

5. 

x = 146°

6. 

x = 120°

7. 

x = 82°

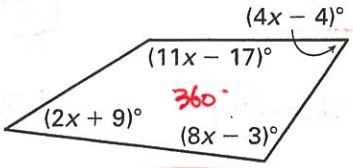
You are given the measure of each interior angle of a regular *n*-gón. Find the value of *n*.

8. 135° 8
9. 156° 15
10. 162° 20
11. $172\frac{4}{5}°$ 50

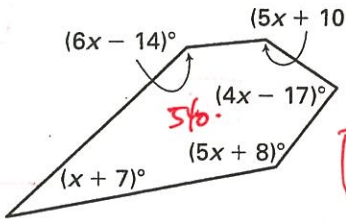
You are given the measure of each exterior angle of a regular *n*-gon. Find the value of *n*.

12. 40° 9
13. 36° 10
14. $7\frac{1}{2}°$ 48
15. 2° 180

Find the value of *x*.

16. 

x = 15

17. 

x = 26

Would it be possible for a regular polygon to have interior angles with the angle measure described? Explain.

18. 155° No
19. 160° YES — n = 18
20. 165° YES n = 24
21. 168° YES n = 30

Tell whether each statement is *always*, *sometimes*, or *never* true.

22. As the number of sides of a polygon increases, the sum of the interior angles increases. ALWAYS
23. As the number of sides of a polygon increases, the sum of the exterior angles decreases. NEVER
24. A regular polygon is equilateral. ALWAYS
25. An equilateral polygon is regular. SOMETIMES
26. If the number of sides of an equiangular polygon is doubled, the measure of each exterior angle is halved. ALWAYS
27. The measure of an exterior angle of a decagon is greater than the measure of an exterior angle of a pentagon. SOMETIMES