NAME _____ DATE _____ PERIOD ____

8-1 Skills Practice

Angles of Polygons

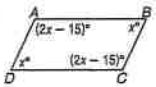
Find the sum of the measures of the interior angles of each convex polygon.

1. nonagon
   1260
2. heptagon
   900
3. decagon
   1440

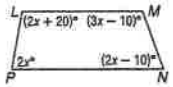
The measure of an interior angle of a regular polygon is given. Find the number of sides in each polygon.

4. 108
   5
5. 120
   6
6. 150
   12

Find the measure of each interior angle using the given information.

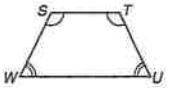
7. 

   $m\angle A = 115$, $m\angle B = 65$, $m\angle C = 115$, $m\angle D = 65$

8. 

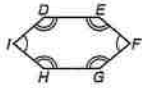
   $m\angle L = 100$, $m\angle M = 110$, $m\angle N = 70$, $m\angle P = 80$

9. quadrilateral $STUW$ with $\angle S \cong \angle T$, $\angle U \cong \angle W$, $m\angle S = 2x + 16$, $m\angle U = x + 14$



   $m\angle S = 116$, $m\angle T = 116$, $m\angle U = 64$, $m\angle W = 64$

10. hexagon $DEFGHI$ with $\angle D \cong \angle E \cong \angle G \cong \angle H$, $\angle F \cong \angle I$, $m\angle D = 7x$, $m\angle F = 4x$



   $m\angle D = 140$, $m\angle E = 140$, $m\angle F = 80$, $m\angle G = 140$, $m\angle H = 140$, $m\angle I = 80$

Find the measures of an interior angle and an exterior angle for each regular polygon.

11. quadrilateral
    90, 90
12. pentagon
    108, 72
13. dodecagon
    150, 30

Find the measures of an interior angle and an exterior angle given the number of sides of each regular polygon. Round to the nearest tenth if necessary.

14. 8
    135, 45
15. 9
    140, 40
16. 13
    152.3, 27.7

Lesson 8-1

NAME _____ DATE _____ PERIOD ____

8-1 Practice (Average)

Angles of Polygons

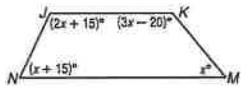
Find the sum of the measures of the interior angles of each convex polygon.

1. 11-gon
   1620
2. 14-gon
   2160
3. 17-gon
   2700

The measure of an interior angle of a regular polygon is given. Find the number of sides in each polygon.

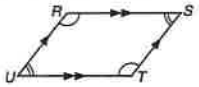
4. 144
   10
5. 156
   15
6. 160
   18

Find the measure of each interior angle using the given information.

7. 

   $m\angle J = 115$, $m\angle K = 130$, $m\angle M = 50$, $m\angle N = 65$

8. quadrilateral $RSTU$ with $m\angle R = 6x - 4$, $m\angle S = 2x + 8$



   $m\angle R = 128$, $m\angle S = 52$, $m\angle T = 128$, $m\angle U = 52$

Find the measures of an interior angle and an exterior angle for each regular polygon. Round to the nearest tenth if necessary.

9. 16-gon
   157.5, 22.5
10. 24-gon
    165, 15
11. 30-gon
    168, 12

Find the measures of an interior angle and an exterior angle given the number of sides of each regular polygon. Round to the nearest tenth if necessary.

12. 14
    154.3, 25.7
13. 22
    163.6, 16.4
14. 40
    171, 9

15. **CRYSTALLOGRAPHY** Crystals are classified according to seven crystal systems. The basis of the classification is the shapes of the faces of the crystal. Turquoise belongs to the triclinic system. Each of the six faces of turquoise is in the shape of a parallelogram. Find the sum of the measures of the interior angles of one such face.
    360

Answers