6-3 Polygons and Angles - Practice and Problem Solving

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

5. pentagon

7. 11-gon

9. 19-gon

11. ART The sculpture below consists of repeating regular pentagons and hexagons. Find the measure of one interior angle of a pentagon.

Find the measure of one interior angle in each regular polygon. Round to the nearest tenth if necessary.

13. nonagon

15. 13-gon

ART Use the following information.
A tessellation is a repetitive pattern of polygons that fit together without overlapping and without gaps between them. For each tessellation, find the measure of each angle at the circled vertex. Then find the sum of the angles.

17.
19. **ARCHITECTURE** The surface of the dome of Spaceship Earth in Orlando, Florida, consists of repeating equilateral triangles as shown. Find the measure of each angle in each outlined triangle. Then make a conjecture about the interior angle measures in equilateral triangles of different sizes.

![Image of Spaceship Earth Dome]

21. **WRITING IN MATH** Explain the relationship between the number of sides of a regular polygon and the measure of each interior angle.

**TEST PRACTICE**

23. Which statement is *not* true about the pattern of repeating regular octagons and rectangles?

![Image of Octagons and Rectangles]

- **F** The sum of the angles in each rectangle is 360°.
- **G** The sum of the angles in each octagon is 1,080°.
- **H** The sum of the angles at the circled vertex is 270°.
- **J** The measure of each interior angle of an octagon is 135°.

25. Find the value of $x$ in the figure.

![Image of Angle Measurement]

**SCHOOL** Use the following information.

A recent survey asked parents to grade themselves based on their involvement in their children’s education. The results are shown.

![Parent Survey Card]

27. Did more or less than $\frac{2}{5}$ of the parents give themselves a B?
PREREQUISITE SKILL  Decide whether the figures are congruent. Write \textit{yes} or \textit{no} and explain your reasoning.

29.