1-6 Practice

Two-Dimensional Figures

Name each polygon by its number of sides and then classify it as **convex** or **concave** and **regular** or **irregular**.

1. hexagon; concave; irregular
2. nonagon; convex; regular
3. quadrilateral; convex; irregular

Find the perimeter or circumference and area of each figure. Round to the nearest tenth.

4. 
   - sides: 4
   - perimeter: 17 ft
   - area: 42 ft; 68 ft²

5. 
   - radius: 7 mi
   - perimeter: approximately 44.0 mi
   - area: 153.9 mi²

6. 
   - base: 8 mm
   - height: 8.1 mm
   - area: 24.2 mm²
   - perimeter: 28 mm²

COORDINATE GEOMETRY Graph each figure with the given vertices and identify the figure. Then find the perimeter and area of the figure.

7. O(3, 2), P(1, 2), Q(1, -4), R(3, -4) quadrilateral; 16 units; 12 square units
8. S(0, 0), T(3, -2), U(8, 0) triangle; 17.1 units; 8 square units

CHANGING DIMENSIONS Use the rectangle from Exercise 4.

9. Suppose the length and width of the rectangle are doubled. What effect would this have on the perimeter? Justify your answer. The perimeter doubles. The perimeter of a rectangle with dimensions 34 feet and 8 feet is 84 feet, which is twice the perimeter of the original figure since 2 \times 42 = 84 feet.

10. Suppose the length and width of the rectangle are doubled. What effect would this have on the area? Justify your answer. The area quadruples. The area of a rectangle with dimensions 34 feet and 8 feet is 272 feet squared, which is four times the area of the original figure since 4 \times 68 = 272 ft².

11. SEWING Jasmine plans to sew fringe around the circular pillow shown in the diagram.
   a. How many inches of fringe does she need to purchase? about 31.4 in.
   b. If Jasmine doubles the radius of the pillow, what is the new area of the top of the pillow? about 314.2 in²