

Name \_\_\_\_\_  
Date \_\_\_\_\_ pd \_\_\_\_\_

**Unit 20: Worksheet #1**  
**Regular Polygons**

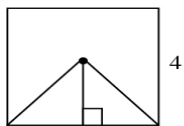
**I. Find the area of each regular polygon. Round your answers to the nearest tenth.**

- \_\_\_\_\_ 1. A pentagon with an apothem 2.8 feet and a perimeter of 20.34 feet
- \_\_\_\_\_ 2. An octagon with an apothem 4.8 centimeters and a side 4 centimeters
- \_\_\_\_\_ 3. A square with a side 24 inches and an apothem 12 inches
- \_\_\_\_\_ 4. A hexagon with a side 23.1 meters and an apothem 20.0 meters
- \_\_\_\_\_ 5. A pentagon with an apothem 316.6 millimeters and a side 460 millimeters

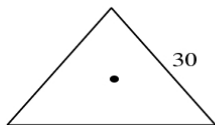
**II. Complete these steps for the following problems, then find the missing information**

- a. For each regular polygon, draw one central  $\angle$  and find its measure using  $360^\circ \div (\# \text{ of sides})$ .
- b. Draw the apothem (a) bisecting the central  $\angle$ .
- c. Write the measure of all the  $\angle$ 's in the right  $\Delta$  formed.
- d. Now you can find the sides s, radius r, apothem a, perimeter P, and/or area A of the regular polygon.

6.  $s = 4, r = \underline{\hspace{1cm}}, a = \underline{\hspace{1cm}}, P = \underline{\hspace{1cm}}, A = \underline{\hspace{1cm}}$



7.  $s = 30, r = \underline{\hspace{1cm}}, a = \underline{\hspace{1cm}}, P = \underline{\hspace{1cm}}, A = \underline{\hspace{1cm}}$



8.  $s = 18, r = \underline{\hspace{1cm}}, a = \underline{\hspace{1cm}}, P = \underline{\hspace{1cm}}, A = \underline{\hspace{1cm}}$

