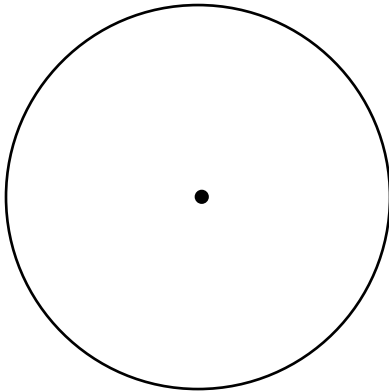
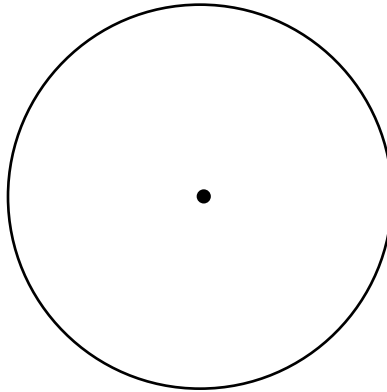


**WORKSHEET 9-4R & 9-5L**

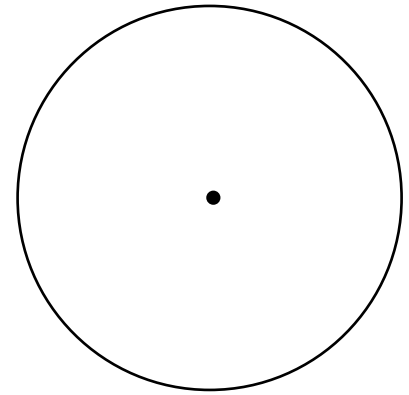
1. Construct the following:  
Inscribed Regular Hexagon



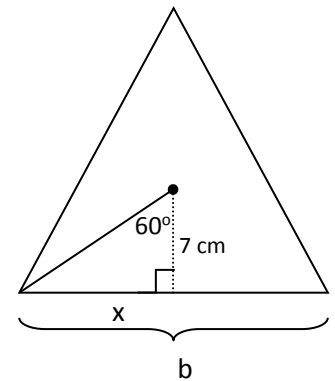
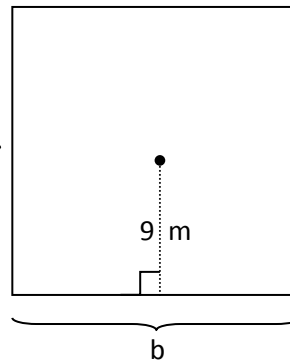
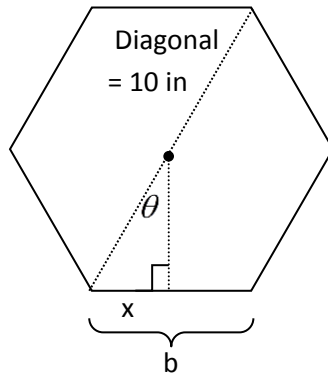
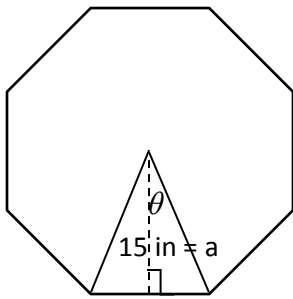
Inscribed Square



Inscribed Equilateral Triangle



2. Fill in the chart with all the dimensions for each of the regular polygons using the given information:



Central Angle				
$\theta$				
a				
x				
b = side length				

3. Look back at both the notes and the worksheet polygons – when was the height of the polygon equal to double the apothem? \_\_\_\_\_

4. A stop sign is a regular octagon which comes in one of two sizes.

- a. Compute the area, to the nearest tenth, of the sign that is 30 inches high (not the diagonal; the height in regular polygon with an even number of sides is equal to twice the apothem length, which is what you hopefully found in #3). USE THE INFORMATION YOU ALREADY PUT IN THE CHART IN #2.



- b. If the entire sign is to be painted with a base coat of red paint, how many gallons of paint will need to be purchased for 50 signs? One gallon of this paint covers 400 square feet.



**Challenge:** which sign requires less metal to produce – the square sign alerting a “stop ahead” with an apothem of 11 inches or the square bike & pedestrian crossing sign with a diagonal of 30 inches? Express your answer as a percent difference from the sign with a smaller area.