Geometry + LAB **Name: _____ Section: _____ Due: _____**
Homework: Bridge to Unit 9

Recall – properties of quadrilaterals, regular polygons, isosceles triangles; finding the area of a triangle; trigonometry.

1. The diagonals d_1 and d_2 intersecting at point E were drawn on the rhombus ABCD at right. d_1= 8 and d_2= 14.

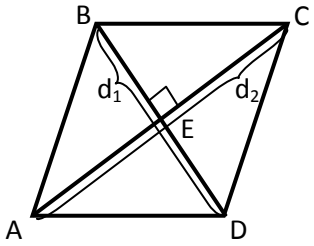
   a) What do the diagonals do to each other in a parallelogram? _____

   b) What is the relationship of the diagonals of a rhombus? _____

   c) Are the four little triangles congruent? _____ Why? _____

   d) Are triangles ABC and CDA congruent? _____ Why? _____

   e) Find the area of ΔABC in terms of d_1 and d_2.



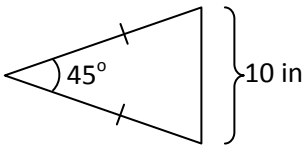
   f) Find the area of ΔCDA in terms of d_1 and d_2.

   g) Find the area of the rhombus ABCD as a composite figure in terms of d_1 and d_2 by adding the areas of ΔABC and ΔCDA. Reduce your fraction to generate the formula for the area of a rhombus in terms of the diagonals.

   h) Can you put your general formula into words? The area of a rhombus is equal to ….

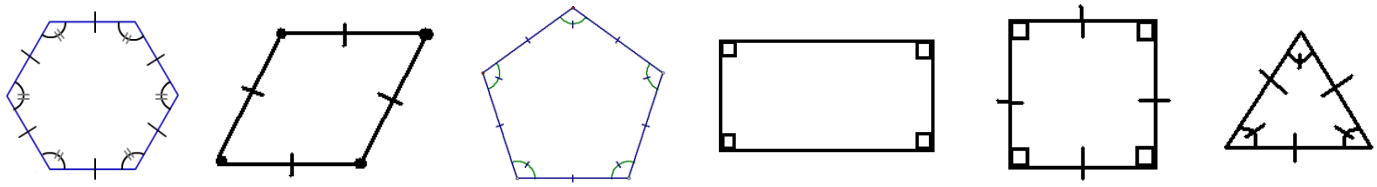
2. Given the isosceles triangle with a vertex angle of 45° and base of 10 inches,

   a. Draw in the altitude from the vertex angle. Describe how you knew where the altitude would be and any resulting relationships from it.

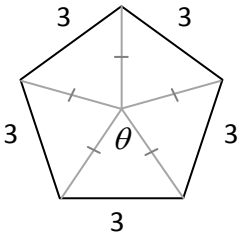


   b. Calculate the area of the triangle. What did you have to consider when finding the area?

3. Which of the following are regular polygons? CROSS OFF those who are not regular polygons and explain why:



4. Is the pentagon pictured at right a regular pentagon? _____



   a. Why do you think so?

   b. The little triangles with a vertex at the center of the pentagon could be classified by sides as _____. Would they all be congruent? _____ If so, why? _____

   c. What do you think would be the measure of θ? Why?