Math 142   _____   Name: _____
Test II -- Fall 2003   100
Chapter 12 and 13.1-13.2   Seat: _____
Show any necessary work. Partial credit is based on work shown!
10pts   6pts
1. Complete the following statements: 2. Using something in this room, illustrate the size of:

   a. 26 cm = _____ mm   a. one millimeter

   b. 630 cm = _____ meters
                                                 b. one meter:
   c. 52 kilometers = _____ meters

   d.   500 cubic cm = _____ Liter   c. one centimeter

   e. 20° Celsius = _____ Fahrenheit

6pts
3. Choose the most realistic measure for each of the following objects:

   a. The height of a tall building: 105 centimeters, 105 meters, or 105 kilometers.

   b. The mass (weight) of a tennis ball: 25 milligrams, 25 grams, or 25 kilograms.

   c. The volume of a can of cola: 400 milliliters, 400 centiliters, or 400 Liters.

4pts
4. True or false: (If false, correct the statement or tell why it is false.)

_____ a. The central angle of any regular polygon has the same measure as any vertex angle
             of the same polygon.

_____ b. One liter of water has the mass of 1 kilogram.
8pts
5. a. Draw a **rectangular prism**   b. Draw a **pentagonal pyramid**
        (Be sure to use **dashed lines** for edges that cannot be seen.)

6pts
6.   A **octagonal pyramid** has _____ faces, _____ vertices, and _____edges.   _____
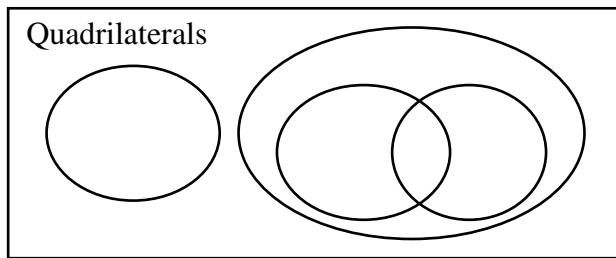   40pts

7. For each of the following, give a definition and then give an example using objects in this room:
    a. skew lines

    b. two intersecting planes

5pts
 8. Put the following names in this Venn diagram to show the correct relationships between these
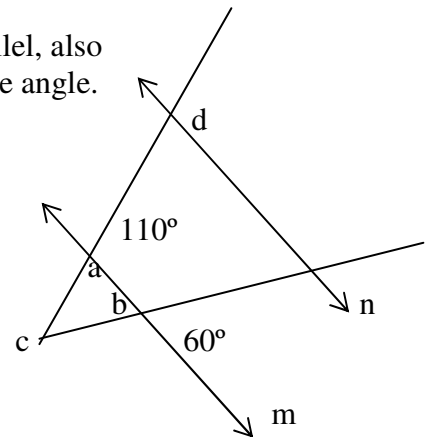   quadrilaterals: **parallelograms, rectangles, rhombuses, squares, and trapezoids.**

Quadrilaterals

8pts
9. Find the missing angles in this figure where lines m and n are parallel, also
    name the relationship to another angle that you used to calculate the angle.

    Angle a = _____ because

    Angle b = _____ because

    Angle c = _____ because

    Angle d = _____ because

d
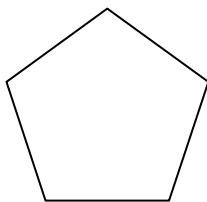
110°

a

b   n

c

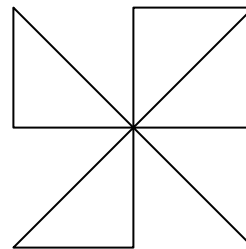60°

m

7pts
10. Draw in all the lines of symmetry for each figure or state there are none.

    a.   b.

4pts
11. What is the smallest number of degrees of rotational symmetry for each of the figures in problem 10?
   a.   b.

     _____
       32pts

12. a. What is the measure of one <u>exterior angle</u> of a regular hexagon?

   b. What is the measure of one <u>vertex angle</u> in a regular hexagon?

   c. Define a semi-regular tessellation.

   d. Can a semi-regular tessellation be made using regular hexagons, squares and equilateral
       triangles? _____ Explain, using the measures of the vertex angles of the figures:

10pts   For # 13 & 14, include appropriate units with your answers.
13. For this trapezoid, find its:

                                          a. area.   b. perimeter.

8 cm

8 cm

14 cm
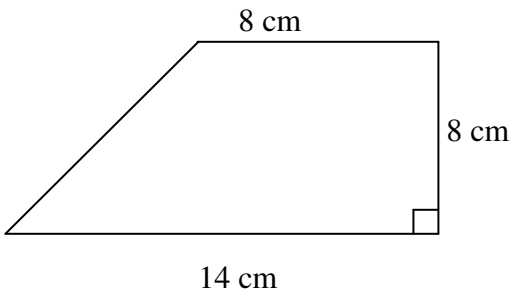
8pts
14. Find the area of the shaded region in the following figure. Note that the quadrilateral is a rectangle
     with a semicircle inside it. The radius of the semicircle is 3 feet.

   3 feet