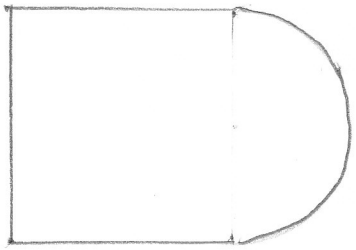
GEOMETRY PROBLEMS OF THE WEEK

Week 1

1. The Browns have a garden, which is formed from a square and a semi-circle, as shown in the picture. One side of the square is 20 ft. What are the area and the perimeter of the garden?



2. The two parallel sides of a trapezoid are 10cm, and 8 cm respectively. The measures of the two angles on the longer side of the trapezoid are 45° and 90°. Find its perimeter and area.

3. Two points are given: A(1, 2) and B(4,1). Find two other points, C and D, so that ABCD is a square. Support your answer with calculations. How many solutions do you have?

   Math 161 or above: Find the equations of the diagonals of this square, and find the equation of the circle you can inscribe in the square. (The circle touches all 4 sides of the square.)

4. I drew a circle with diameter 20ins. Then I cut a quarter of this circle, and form a cone from it. If I am holding its vertex in my hand, how much water can it hold? (in cubic ins)