§ **4.7, Math 1410** **Name:**_____

1. (Ch Rev #38) Find 2 positive integers such that the sum of the first number and 4 times the second number is 1000 and the product is as large as possible.

2. Find the dimensions of a rectangle with area 100 m^2 whose perimeter is as small as possible.

3. (Like §4.7#35) A cylindrical can without a top is made to contain 42 cm^3 of soda. Find the dimensions (radius and height) that will minimize the cost of the metal to make the can.

4. (§4.7 example 5) Find the area of the largest rectangle that can be inscribed in a semicircle of radius r.