Writing Problem #1 - Math 125 honors Winter 2010

Consider an isosceles right triangle.

Consider a parabola which is

1. symmetric with respect to the line bisecting the hypotenuse and the right angle of the triangle and

2. tangent to the sides of the triangle.

This parabola defines a region inside the triangle (i.e., the region bounded by the parabola and the hypotenuse).

What parabola will achieve the maximum possible area for this region?

What parabola will achieve a region with an area equal to half the area of the triangle?