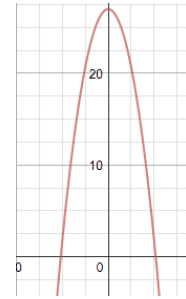


## Optimization

1. A rectangle has its base on the  $x$ -axis and its upper two vertices on the parabola  $y = 27 - x^2$ . What is the largest possible area of the rectangle?



2. [Needs a basic calculator] An open-top box is made by cutting squares of side length  $x$  from the corners of an 18 in x 24 in sheet of tin and bending up the sides. How large should the squares be to maximize the amount that the box holds?

