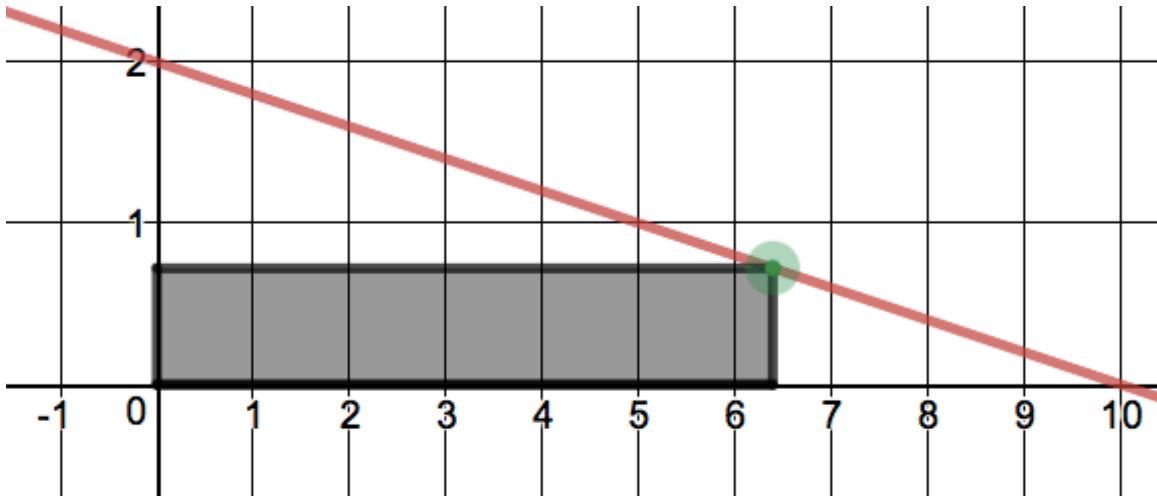**INTRODUCTION TO OPTIMIZATION (PART II)**
CALCULUS | PACKER COLLEGIATE INSTITUTE

Challenge #1

Label the marked point and then all of the sides of the rectangle. (The equation of the line was $x + 5y = 10$.)

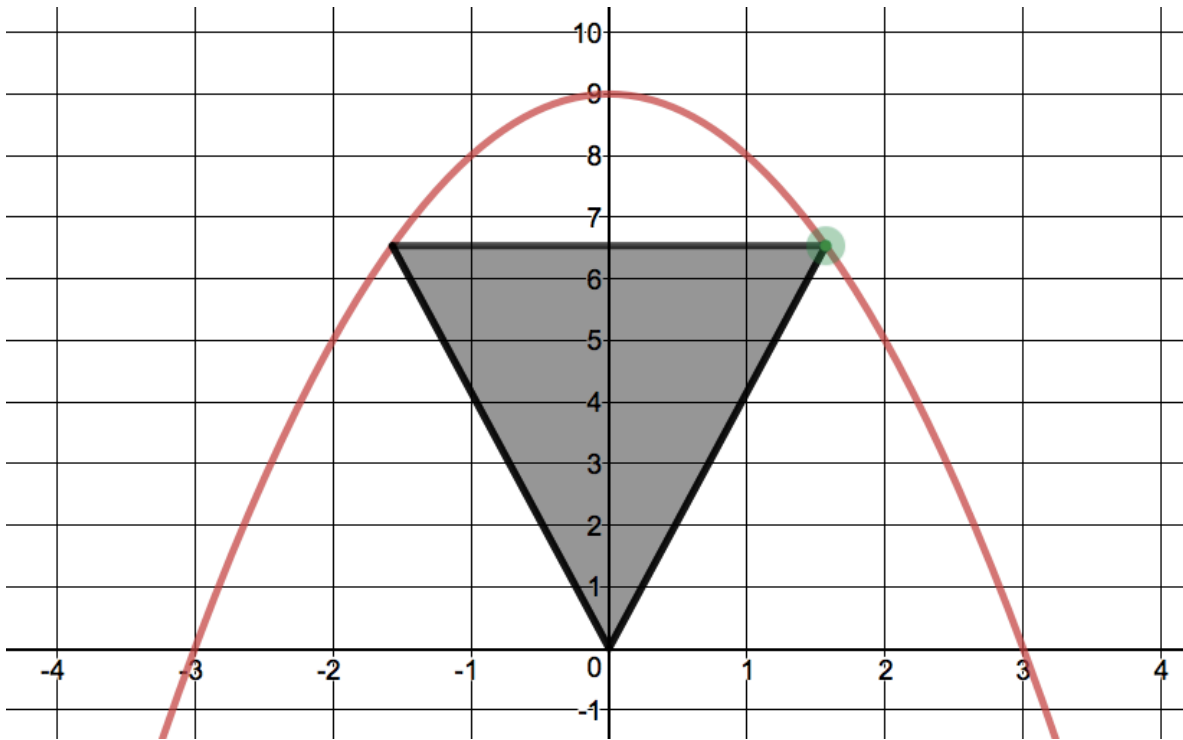Use calculus to determine the dimensions of the rectangle with the largest area.

Width: _____   Height: _____   Area: _____

Challenge #3

Label the marked point and the base and height of the triangle. (The equation of the parabola was $y = 9 - x^2$.)

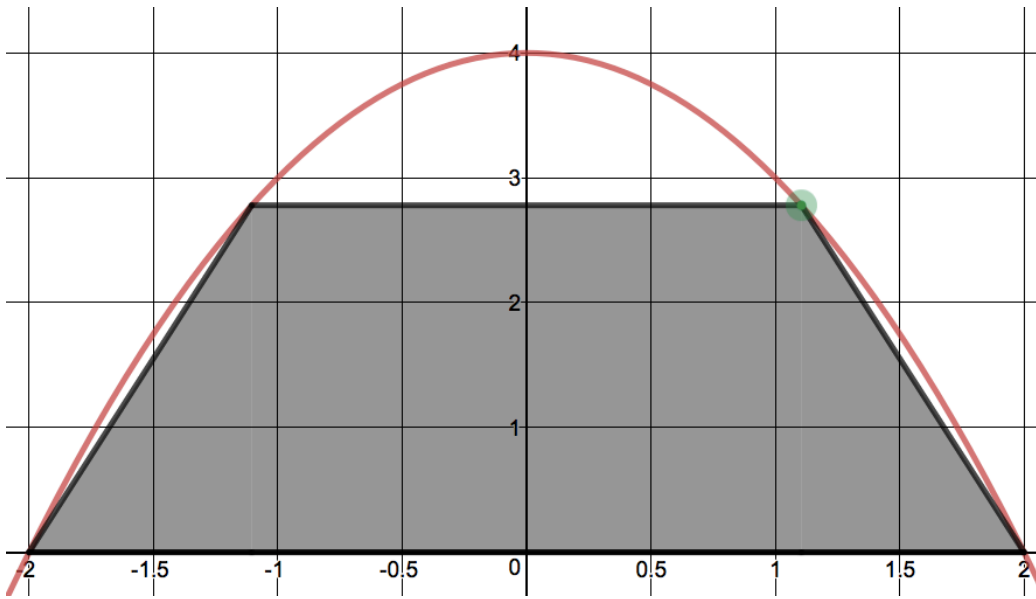Use calculus to determine the dimensions of the triangle with the largest area.

Base: _____   Height: _____   Area: _____

Challenge #4

Label the marked point and the trapezoid's bases and height. (The equation of the parabola was $y = 4 - x^2$.)

Use calculus to determine the dimensions of the trapezoid with the largest area.

Base$_1$: _____   Base$_2$: _____   Height: _____   Area: _____