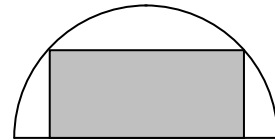


SI Session: April, 9th, 2009
Tuesdays: 3:30 PM – 5:00 PM
Thursdays: 1:30 PM – 3:00 PM
& 3:30 PM – 5:00 PM
Room 1245 SNAD

Prof. Stockton : Calculus I
Spring 2009
SI Leader : Neil Jody

- [1] Find all points on the parabola $y = 4 - x^2$ which are closest to the point $(0, 2)$.

- [2] Find the dimensions of the rectangle of maximum area that can be inscribed in a semicircle of radius 4.



[3] Determine the dimensions of a rectangular solid (with a square base) of maximum volume if its surface area is 150 square inches.

[4] Farmer John wants to create a pig pen. The pen is to be a rectangle divided into three subrectangles. He has exactly 300 feet of wire to create the pen. Find the dimensions of the pen with maximum area.

[5] Use the given information to evaluate and compare dy and Δy .

(a) $y = \sqrt{x^2 + 8}; c = 1, dx = -0,03$

(b) $y = \frac{x}{x^2 + 1}; c = 2, dx = -0.04$

[6] Find the differential dy for the given function.

(a) $y = x \cos x$

(b) $y = \frac{1}{x^3}$