

Applied Optimization Examples

- 1) Determine the dimensions and area of the rectangle of largest area which can be inscribed in the 1st quadrant below the graph $y = 3/(x+1)^2$.
- 2) The 800 room Flea Bag Motel is filled to capacity when the room charge is \$50 per night. For each \$10 increase in room charge, 40 fewer rooms are filled each night. What charge per room will maximize revenue per night?
- 3) Find the point (x,y) on the graph of $y = \sqrt{2x}$ which is nearest to the point $(6,0)$.
- 4) You are to construct a closed right circular cylinder with a volume of $16\pi \text{ ft}^3$. What radius r and height h will result in the cylinder of minimum surface area, and what is the minimum surface area?