

ESP Quiz 7 (Kouba)

Please PRINT your name here : _____

This quiz is due next Tuesday at the beginning of ESP.

1.) (15 pts.) A closed rectangular box with a square base is to have a volume of 64 cubic feet. What should the dimensions of the box be in order that the resulting box have a minimum surface area ?

2.) (15 pts.) Determine the dimensions of the right circular cone of maximum volume which can be inscribed in a sphere of radius 3. RECALL : The volume of a cone is $V = (1/3)\pi r^2 h$.

3.) (15 pts.) Find the point(s) (x, y) on the graph of the hyperbola $x^2 - y^2 = 5$ which is nearest the point $(0, 4)$. HINT : Set up a distance equation and minimize it.