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 \( V = \frac{1}{3}\pi r^2 h \).
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.