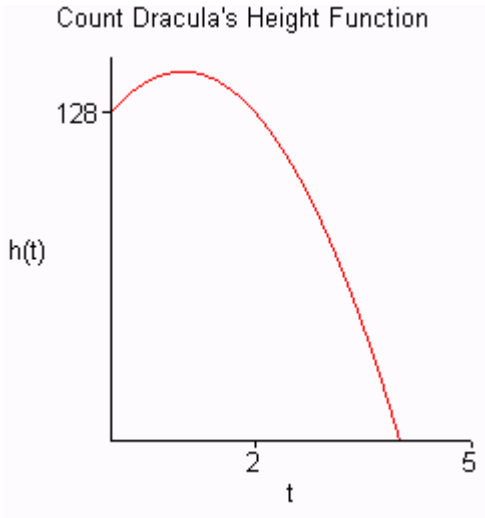
10/31/2003 MA 171 Calculus A Name:_____
Dr. Lunsford Quiz 10 (20 Points Total)

I. For each function given below, find the most general antiderivative of the function. (5 points each, 10 total)

(a) $f(x) = 5\sin x - 3\sqrt[4]{x^3}$

(b) $f(x) = \dfrac{5 - 2x^6 - 3x^8}{x^6}$, $x > 0$

II. Being the showman that he is, and using his super human strength, Count Dracula jumps (essentially straight up!) from his 128 foot tower with a velocity of 32 ft/s. At his maximum height (see the graph below of the Count's height versus time), the Count morphs into a bat. The Count's original plan was to soar gracefully off from this point. However, the Count was having a very bad day and unfortunately, when he morphed into a bat, his wings were missing! How long does the Count have to correct his mistake and avoid having a major splat on the ground (not to mention the embarrassment he will suffer!)? You may assume that the Count will have a constant acceleration due to gravity of –32 ft/s^2 and there is no air resistance for the Count in whatever form he takes. Neatly show all of your work and clearly indicate your answer. (10 points)



BONUS (Happy Halloween!): What is the best Halloween costume you ever wore? How old were you when you wore this costume? (2 points)