

ESP Quiz 3 (Kouba)

Please PRINT your name here : \_\_\_\_\_

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

1.) The height of a palm tree at time  $t$  years,  $0 \leq t \leq 12$ , is given by  $h(t) = (2/3)t \cdot \sqrt{t^2 + 25}$  feet.

a.) (4 pts.) What is the tree's height when  $t = 3$  years ?  $t = 12$  years ?

b.) (6 pts.) What is the tree's average height for  $0 \leq t \leq 12$  ?

2.) (10 pts.) Show algebraically (using the definition of even) that the function  $f(x) = x^3 \sin x$  is even.

3.) (10 pts. each) The enrollment at UC Davis was 19,250 students in 1982 ( $t = 0$  years) and in 2003 ( $t = 21$  years) was 30,230 students. Assuming exponential growth,

a.) what is the expected enrollment at UCD in 2010 ?

b.) what was the estimated enrollment at UCD in 1970 ?