Math 16A (Summer 2010)
Kouba
Quiz 6

PRINT Name : _____

Exam ID # : _____

1.) (10 pts. each) Assume that y is a function of x. Find $y' = \dfrac{dy}{dx}$.

a.) $x^2 y^3 + 5x = y$

b.) $\sin(xy) = y \cdot \tan x$

2.) Assume that $xy + y^2 = x + 4$.

    a.) (6 pts.) Find the slope of the graph of this equation at the point $x = 0, y = 2$.

    b.) (6 pts.) Determine if the graph of this equation is concave up or concave down at the point $x = 0, y = 2$.

    c.) (3 pts.) Sketch a graph of this equation near the point $x = 0, y = 2$.

3.) (10 pts. each) Consider the given right triangle. If x is increasing at the rate of 2 ft./min. and y is decreasing at the rate of 1 ft./min., then find the following related rates when $x = 4$ ft. and $y = 3$ ft.

a.) The rate at which its AREA is changing
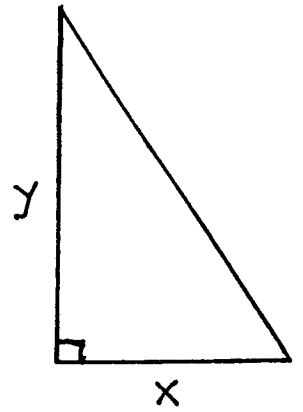
b.) The rate at which its HYPOTENUSE is changing