Math 16A (Summer 2010)
Kouba
Quiz 4

PRINT Name : _____

Exam ID # : _____

1.) (5 pts. each) Use shortcut rules to find the derivatives of each function. Do not simplify answers.

a.) $y = x \tan x$

b.) $f(x) = (7x - 4)^{3/2}$

c.) $y = \dfrac{2 + \cos x}{3 - \sin x}$

d.) $y = \left(\dfrac{x - 4}{5 - 2x}\right)^{20}$

e.) $g(x) = 5 + 4\cos(x^2)$

f.) $g(x) = \tan^3(\sec(x^3))$

3.) (5 pts. each) a.) Assume that $f(x) = x^3(x-5)^2$. Solve $f'(x) = 0$ for x.

b.) Assume that $f(x) = 4\sin x - x^2$. Solve $f''(x) = 0$ for x, $0 \leq x \leq 2\pi$.

4.) Assume that a calculus textbook is projected straight up at 96 feet per second from the top of a building 128 feet high.

a.) (3 pts.) Write an equation for the height $s(t)$ (feet) of the textbook above the ground at time t seconds.

b.) (2 pts.) What is the height of the textbook when $t = 2$ seconds ? $t = 6$ seconds ?

c.) (5 pts.) When does the textbook reach its highest point and how high is it ?