

NAME: KEY

**MATH 1960 section 004: Quiz #1**

*Friday, January 15, 2010.*

You may get up to 10 points for this quiz. Your answers/solutions should be written clearly and legibly. The presentation of your solutions/answers to problems marked with a "\*" will be worth up to 50% of the total amount of points available for that problem.

**PROBLEM 1** Find the derivatives of the following functions.  
(Just give your answers)

(a)  $y = 2\sqrt{x} \sin(\sqrt{x})$

$$\frac{dy}{dx} = \frac{1}{\sqrt{x}} \sin(\sqrt{x}) + \cos(\sqrt{x})$$

(b)  $g(x) = \int_x^1 \frac{6}{3+t^4} dt$

$$g'(x) = -\frac{6}{3+x^4}$$

(c)  $y = \sqrt{2}e^{\sqrt{2}x}$

$$\frac{dy}{dx} = 2e^{\sqrt{2}x}$$

(d)  $y = \sqrt{2}x^{-\sqrt{2}}$

$$\frac{dy}{dx} = -2x^{-\sqrt{2}-1}$$

(e)  $y = 9^{2t}$

$$\frac{dy}{dt} = 2 \ln(9) 9^{2t}$$