Math 75B Quiz 1 (blue) $/20$ Name: _____
Fall 2008
§§9-A, 9-B (E) 2.6, 3.3 (S)

Please read directions carefully. Raise your hand if you are not sure what a problem is asking.

You must explain your work thoroughly and unambiguously to receive full credit on questions or parts of questions designated as **Work and Answer***.*

No calculators or notes are allowed on this quiz.

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Multiple Choice. (8 points) *Circle the letter of the best answer.*

1. If y is a function of x, then the derivative of $\sin(x + y)$ with respect to x is

(a) $\cos(x + y)(1 + y')$ (c) $2\cos(x + y)$

(b) $\cos(1 + y')$ (d) $\cos(2)y'$

2. If $x\frac{dy}{dx} + y = y^2\frac{dy}{dx}$, then $\frac{dy}{dx} =$

(a) $x - y^2$ (c) $-\dfrac{y}{x - y^2}$

(b) $\dfrac{1}{x - y^2}$ (d) $\dfrac{x}{y^2} - y$

Fill-In. (4 points) If $x\frac{dy}{dx} + y = y^2\frac{dy}{dx}$, find the slope of the tangent line to the graph (of y as an implicit function of x) at the point $(3, -3)$.

slope = _____

Work and Answer. (8 points) *You must show all relevant work to receive full credit. You may use the back if you need more room.*

Find the derivative of the function $f(x) = \ln\left(\dfrac{(2x + 1)^3}{\sin x}\right)$.