

NAME: _____

Math 200 Calculus I (Bueler)

26 March 2008

Quiz #6

20 points total. You have 20 minutes.

1. (5 pts) Find dy/dx by implicit differentiation

$$x^2y + \cos y = 4.$$

2. (5 pts) Show using implicit differentiation that

$$\frac{d}{dx} [\arcsin(x)] = \frac{1}{\sqrt{1-x^2}}.$$

(*HINT*: Start by writing $y = \arcsin(x)$ and rewriting that as $\sin y = x$.)

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3. (5 pts) Differentiate

$$f(x) = \ln\left(\frac{\sqrt{x}}{2x+1}\right).$$

4. (5 pts) Find the instantaneous rate of change of the area A of a circle with respect to its radius r when $r = 7$.