

Math 105 Quiz 6

§3.3, 3.4, 3.5

Name:

Show all work for credit. You do not need to simplify these answers. This quiz may not have “pretty” numbers.

1. Find $\frac{dy}{dx}$ at the point (1,-1) for $-3x^3 - y^3 = x^2y$.

2. Use logarithmic differentiation to find y' . It is okay, to save time, to leave y in your final answer and not replace it with the given function.

$$y = \frac{(\cos x)^5(3x - 4)^3e^{x^3}}{\sin(3x)(3x^3 - 4x + 5)^4}$$

3. Determine the antiderivative of the following. Check your answer.

(a)

$$f(x) = \frac{2}{1 + 5x^2}$$

(b)

$$f(x) = \frac{x}{1 + x^2}$$