

Math 105 Quiz 4

§2.5, 2.6, 2.7

Name:

Show all work for credit.

1. (CAREFULLY) Differentiate $g(t) = 3\sin(t) + \pi - \ln(\sqrt{t}) + e^{6t}$.

2. Consider the following differential equation and IVP

(a) Verify that $y = \cos(x) + Ce^x$ solves the following differential equation

$$y'' - y + \cos(x) = -\cos(x)$$

(b) Find the particular solution such that y also satisfies $y(0) = 5$.

3. Find the antiderivative of $f(x) = 5^x - x^2 + \frac{1}{x} - \sin(x) + e^{-2x}$. (**Check your answer.**)