

Quiz #3

Name: _____

Math 180, Prof. Beydler

Wednesday, May 20, 2020

Directions: We're working on the honor system here: no notes, books, phones, or computers during the quiz (except for using a computer to write your answers). Also, no getting help from other people. You may e-mail me to ask for clarification about any problem. **Show all work.** A **scientific calculator** is allowed. Write your answers in the indicated places, or box your answers. Good luck!

1. (3 points) Find the most general antiderivative for $f(x) = \frac{1}{3} \csc^2 x + \sin 3x - \frac{2}{x} + \sqrt[4]{x} - 3^x$.

Answer: _____

2. (2 points) A particle is moving with the given data. Find a function $s(t)$ that represents the position of the particle as a function of time t .

$$v(t) = \frac{4}{1+t^2}, \quad s(1) = 4$$

 $s(t) =$ _____

3. (3 points) Evaluate the following integral using a substitution: $\int \frac{-1}{3x(\ln x)^2} dx$

Answer: _____

4. (3 points) Evaluate the following integral using integration by parts: $\int e^{3x} \cos x \, dx$

Answer: _____

5. (4 points) Evaluate the following integral using a integration by parts and then a substitution:
 $\int x \sec^2 x \, dx$

Answer: _____