

Directions: Work all problems in the assignment. If you need more room use the back of the page to complete the problem.

Section 5.1

Problem 14. Find the indefinite integral and check your result by differentiation.

$$\int 4y^{-3} dy$$

Problem 40. Find the indefinite integral and check your result by differentiation.

$$\int \frac{1}{4x^2} dx$$

Problem 64. **Cost** Find the cost function for the given marginal cost and specified fixed cost.

$$\frac{dC}{dx} = \frac{1}{50}x + 10 \quad \text{when } x = 0, C(x) = \$1000$$

Section 5.2

Problem 24. Find the indefinite integral and check your result by differentiation.

$$\int u^3 \sqrt{u^4 + 2} \, du$$

Problem 40. Use formal substitution as in Example 5 in the textbook to find the indefinite integral.

$$\int \frac{3}{\sqrt{2x+1}} dx$$

Problem 54. **Demand Function** Find the demand function $x = f(p)$ that satisfies the initial conditions.

$$\frac{dx}{dp} = -\frac{400}{(0.02p - 1)^3}$$

When $x = 10,000$ we have $p = \$100$.

Section 5.3

Problem 22. Use the Log Rule to find the indefinite integral.

$$\int \frac{x}{x^2 + 4} dx$$

Problem 46. Use any basic integration formulas to compute the following indefinite integral.

$$\int (5e^{-2x} + 1) dx$$

Problem 64. Determine whether or not the following equation is true or false.

$$\int \ln(x) dx = \frac{1}{x} + C$$

where C is a constant of integration.

Student ID: _____

Dept. & Number: Math 1100

Lesson Number: 10

Name: _____

Address: _____
Street Apt.

_____ City State Zip Code

Date: _____

Grade: _____

Read By: _____

Comments: _____
