

Math 1220 Section 1 - Fall 2007
Exam I

Answer the questions in the spaces provided on the question sheets. Show all work for full credit. Each question is worth 10 points.

Name: _____

1. $\int \frac{6x + 9}{3x^2 + 9x} dx =$

2. Find $(f^{-1})'(2)$, where $f(x) = 3x^5 + x - 2$.

$$3. \int e^{x+e^x} dx =$$

$$4. \int x2^{x^2} dx =$$

5. Solve the differential equation subject to the given condition:

$$\frac{dy}{dt} = -6y, \quad y(0) = 4.$$

6. Find the general solution to the differential equation:

$$\frac{dy}{dx} - \frac{y}{x} = xe^x.$$

(You may assume that $x > 0$.)

$$7. \int \frac{1}{x^2 - 6x + 13} dx$$

$$8. \int \cos x \sinh(\sin x) dx =$$

$$9. \int \frac{\sec^3 x + e^{\sin x}}{\sec x} dx =$$

$$10. \int \frac{\ln x}{x^2} dx =$$

$$11. \int \sin^2 x \, dx =$$

$$12. \int \frac{1}{(x^2 + 4)^{3/2}} \, dx =$$

$$13. \int \frac{3x - 13}{x^2 + 3x - 10} dx$$