

Math 242, Fall 1994, Exam 2

PRINT Your Name: _____

There are 6 problems on 3 pages. Problems 3 and 4 are worth 9 points each. Each of the other problems is worth 8 points. The exam is worth a total of 50 points. SHOW your work. **CIRCLE** your answer. **CHECK** your answer, whenever possible.

1. State the Existence and Uniqueness Theorem for linear second order differential equations.
2. Find all solutions of $y'' - 2y' + y = 0$.
3. Find all solutions of $y'' + y = 15e^{2x}$.
4. Find all solutions of $y'' - y = 4e^x$.
5. Find all solutions of $x^3 + 3y - xy' = 0$.
6. Find all solutions of $xy + y^2 - x^2y' = 0$.