Math 242, 1990, Exam 3

There are 4 problems. Use your own paper. SHOW your work. $\boxed{BOX}$ your answer. Each problem is worth 25 points.

1. Use the method of Laplace Transforms to solve

$$x'' - 4x = 3t \quad x(0) = x'(0) = 0.$$

2. Find $f(t)$ for

$$\mathcal{L}(f(t)) = \ln\left(\frac{s^2 + 2s + 5}{(s+1)^2}\right).$$

3. Use the method of Laplace Transforms to solve

$$tx'' - 2x' + tx = 0 \quad x(0) = 0.$$

4. Find the general solution of

$$4x^2y'' - 4xy' + 3y = 8x^{4/3}.$$