Math 365: Honors Analysis I   Name:_____

Quiz 4   *November 15, 2000*

1. Let L denote the Laplace transform. Prove:

a) $L[y'] = pL[y] - y(0)$

b) $L[xf(x)] = -F'(p)$ where $F(p) = L[f(x)]$.

2. Solve the initial value problem $y'' + 2y' + y = x^2$, $y(0) = 0$, $y'(0) = 0$,
a) by direct application of Laplace transforms;

b) by convolution using the impulsive response.