Quiz 4

Answer 4 of the 5 problems. Each are worth 2 points.

(Only 4 will be graded, so if you submit 5, I will grade the first 4 I see.)

1. Find an annihilator for $2e^{-2x}\cos(3x) + x^5e^{2x}$ and use it to rewrite $y'' + 3y' - 4y = 2e^{-2x}\cos(3x) + x^5e^{2x}$ as a homogeneous equation.
2. Find a general solution to $y''' - 3y'' - 4y' + 12y = 0$.
3. Use the definition of the Laplace transform to compute $\mathscr{L}\left\{\dfrac{e^t - e^{-t}}{2}\right\}$.
4. Compute $\mathscr{L}\left\{3e^{3t}\sin(3t) + t^2\cos(3t) + \frac{1}{7}t^7\right\}$.
5. Compute $\mathscr{L}\{2y'' + 3y\}$, where $y(t) = te^t$.