Math 2280 - Quiz 2

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Spring 2008

Name: _____

50 Points Possible

1. The circuit below is being driven by a power source that provides an EMF given by $E(t) = \cos 3t$. The resistor's resistance is 6Ω, the inductor's inductance is $1H$, and the capcaitor's capacitance is $.04F$. Find the form of the function $I(t)$ (the general solution to the ODE) that describes the flow of current through the circuit. (10 points)

2. Convert the following system of equations into an equivalent system of first-order equations: (5 points)

$$x^{(3)} = x'' - 2x' + 5y' + 2x + 1$$
$$y'' = x' + 5x - 14y'$$