Math 231, Introduction to Differential Equations, Fall 2011

Queen's University, Department of Mathematics

Tutorial , Monday October 31! wwwhhooooo Hallow'een!

1) A mass m weighing 3 lbs strethces a spring 3 inches. If the mass is pushed upward, contracting the spring a distance of 1 inch, and then set in motion with a downward velocity of 2 ft/sec, and if there is no damping, find the position $y(t)$ and the time of first return to equilibrium position.

2.Find a suitable form for the the particular solution using the method of undetermined coefficients, but do not evaluate the constants

$$y''' - 2y'' + y' = t^3 + 2e^t$$

3. Find the solution to the intial value problem (use the exponential shift to reduce complexity of the calculation)

$$L[y] = (D^2 + 2D + 3)[y] = e^t \cos(t) \quad y(0) = \frac{1}{8}, y'(0) = 0$$

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