Homework #2 **Math 527, UNH fall 2015**
Due Tuesday, Sep. 15 at beginning of recitation.

The usual instructions: Solve the problems, simplifying the solution as much as you can. AWE and ADTSTTBSOTE. Your work should be clear, legible, organized, and written on loose-leaf paper. Write your name, Math 527, section #, and HW2 in the upper-right corner, and staple the pages together on the upper-left corner.

Problems 1-7: Determine if the ODE is an "exact equation." If it is, find an implicit solution, or an explicit solution if you can.

1. $2x + y - (x + 6y)\dfrac{dy}{dx} = 0$

2. $2x - 1 + (3y + 7)\dfrac{dy}{dx} = 0$

3. $5t + 4y + (4t - 8y^3)\dfrac{dy}{dt} = 0$

4. $x^2 - y^2 + (x^2 - 2xy)\dfrac{dy}{dx} = 0$

5. $t\dfrac{dy}{dt} = 2te^t - y + 6t^2$

6. $(x + y)^2 + (2xy + x^2 - 1)\dfrac{dy}{dx} = 0$

7. $\sin y - y \sin x + (\cos x + x \cos y - y)\dfrac{dy}{dx} = 0$