Homework #2 **Math 527, UNH spring 2018**
Due Thursday, Feb. 8 in recitation.

The usual instructions: Solve the problems, simplifying the solution as much as you can. AWE (Always Write Equations) and ADTSTTBSOTE (Always Do The Same Thing To Both Sides Of The Equation). 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. $\sin y - y \sin x + (\cos x + x \cos y - y)\dfrac{dy}{dx} = 0$