Homework #3 **Math 527, UNH spring 2018**
Due Thursday, Feb. 29 in recitation.

Follow the usual instructions on homework submission: Be clear, legible, and organized. Write on loose-leaf paper. Staple together in the left-hand corner, write your name, section #, Math 527 HW2, and date in the upper-right-hand corner.

Problems 1-6. Find the general solution of the differential equation using judicious guessing. The "prime" notation indicates differentiation with respect to x or t, whichever appears on the right-hand-side.

1. $y'' + 3y = x^3 - 1$

2. $y'' + 4y' + 4y = te^{2t}$

3. $y'' + 2y' + y = e^{-t}$

4. $y'' + 4y = t \sin 2t$

5. $y'' - 2y' + 5y = 2\cos^2 x$

6. $y'' + y' - 6y = \sin t + te^{2t}$

Problem 7. Solve the initial value problem

$y'' - y = \cosh x; \quad y(0) = 2,\ y'(0) = 12$