

Homework #4

Math 527, UNH spring 2014

Due Thursday, February 27th in recitation

The usual instructions: Solve the problems. AWE and ADTSTTBOTE. Be neat and organized. Write your name, section number, and “HW 4” in the upper-right corner.

Problems 1-8. Find the general solution of the differential equation using the method of judicious guessing. The “prime” notation indicates differentiation: $y' = dy/dx$, etc.

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

2. $y'' - 10y' + 25y = 30x + 3$

3. $4y'' - 4y' - 3y = \cos 2x$

4. $y'' + 4y = 3 \sin 2x$

5. $y'' - y' + y/4 = 3 + e^{x/2}$

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

7. $y'' + 2y' + y = \sin x + 3 \cos 2x$

8. $y'' - y = x^2 e^{3x}$