**Homework #8** **Math 527, UNH fall 2015**
**Due Thursday, Nov. 5 in recitation.**

**Problems 1-7:** Use Laplace transforms to solve the initial value problems.

**1.** $y' - y = 1, \quad y(0) = 0$

**2.** $y' + 6y = e^{4t}, \quad y(0) = 2$

**3.** $y'' + 5y' + 4y = 0, \quad y(0) = 1, \quad y'(0) = 0$

**4.** $y'' + y = \sqrt{2}\sin\sqrt{2}t, \quad y(0) = 10, \quad y'(0) = 0$

**5.** $y'' - 6y' + 9y = t, \quad y(0) = 0, \quad y'(0) = 1$

**6.** $y'' - 4y' + 4y = t^3e^{2t}, \quad y(0) = 0, \quad y'(0) = 0$

**7.** $y'' - 5y' + 6y = \mathscr{U}(t-1), \quad y(0) = 0, \quad y'(0) = 1$

These problems are Zill 7.2 exercises 31, 33, 35, 37, and 7.3 exercises 25, 24, and 68.