MATH 950, FALL 2015

Homework 2 - due Monday, October 5

- **Problem 1 - 5 points**
  Reduce each of the following equations to standard form (classify each one first) and find the general solution.
  a) $4u_{xx} + 4u_{xy} + u_{yy} = \sin(x + 2y)$
  b) $u_{xx} + 2u_{xy} - 3u_{yy} = e^{x+2y}$
- **Problem 2 - 5 points**
  Problem 10, section 2.2 McOwen book, page 59.
- **Problem 3 - 5 points**
  Problem 4, section 3.1 McOwen book, page 82.
- **Problem 4 - 5 points**
  Problem 2, section 3.2 McOwen book, page 90.
- **Problem 5 - 5 points**
  Problem 5, section 3.2 McOwen book, page 90.
- **Problem 6 - 5 points**
  Problem 5, section 3.3 McOwen book, page 94.
- **Bonus**
  Problem 7, section 3.2 McOwen book, page 91.
  This problem is rather long, but there is a hint in the book for part b) and part a) can be done using induction argument.