

HW #5a

Math 182, Spring 2009

Due Friday, February 27, 2009, by 11:00 a.m.

1. Consider the PDE

$$yu_{xx} - 2u_{xy} + xu_{yy} = 0.$$

Find the region(s) in which the equation is hyperbolic, parabolic, or elliptic.

2. Repeat problem 1 for the PDE

$$xu_{xx} + 2u_{xy} + xu_{yy} - xu_x + x^2yu_y = \sin(y).$$

3. p. 75, problem 3.12.