Math 4315 - PDEs   Home Work 2

1. Solve the following PDEs by the method of characteristics

$$(i) \quad 2u_x - 3u_y = 1,$$

$$(ii) \quad xu_x + (x + 2y)u_y = x,$$

$$(iii) \quad xu_x + (u + y)u_y = 1,$$

$$(iv) \quad u_x + 2xu_y = 4xy, \quad u(x,0) = x^4,$$

$$(v) \quad xu_x + 2yu_y = u + x^2, \quad u(x,x) = x^2 + 1.$$

Due: Sept. 28, 2020.