Math 4315 - PDEs   Home Work 3

1. Solve the following PDEs by the method of characteristics

$$(i) \quad u_x^2 - 3u_y^2 - u = 0, \quad u(x,0) = x^2$$

$$(ii) \quad u_x^2 + u_y + u = 0, \quad u(x,0) = x,$$

$$(iii) \quad u_x^2 - u\, u_y = 0, \quad u(x,y) = 1 \text{ along } y = 1 - x$$

Due: Oct. 2, 2020.
Test 1: Oct. 7, 2020