

example: I assigned 6.2 (b, d)

I did 6.2 (a), from MTZ

I'll do 6.2 (c).

$$2xy u_x + u_y - u = 0$$

$$\frac{dx}{2xy} = \frac{dy}{1}$$

$$\frac{dx}{x} = 2y dy$$

$$\ln|x| = y^2 + C$$

$$|x| = e^{y^2} \cdot e^C$$

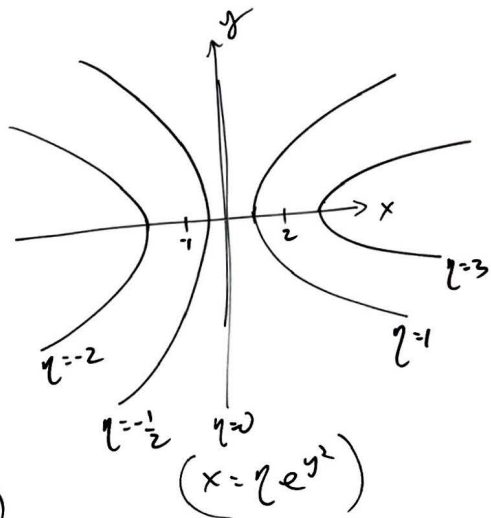
Pos.

is the system I
solve for $\eta(x, y)$

(was $u_1(x, y)$)

$$x e^{-y^2} = \text{const} \quad (\text{or } x = \text{const } e^{y^2})$$

$$\text{Choose } \eta(x, y) = x e^{-y^2}$$



$$\xi(x, y) = ?$$

$\xi(x, y) = x$ has a problem.

$x=0$ is $\eta=0$

Choose

$$\xi(x, y) = y$$

I'll finish this next time.

(Including justification that this choice $\xi(x, y) = y$
~~is~~ gives $J \neq 0$.)