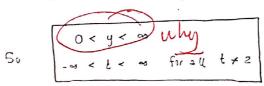
5. (7 pts) Consider the differential equation

$$(t+2)y' = y^{\frac{2}{3}}.$$

(a) For what points (t_0, y_0) does the Existence Theorem guarantee that a solution exists satisfying $y(t_0) = y_0$?

$$y' = \frac{y''}{t+2}$$
 \Rightarrow $f(t,y) = \frac{y''/3}{t+2}$

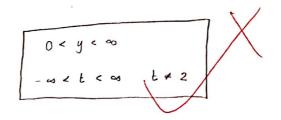
Lut since we need a restangle around (to, y.), y=0 is not guarantzed?



(b) For what points (t_0, y_0) does the Uniqueness Theorem guarantee that there is only one solution satisfying $y(t_0) = y_0$?

$$\frac{\partial f}{\partial y} = \frac{2}{3y^{1/3}(t+2)}$$

$$\frac{\delta f}{\delta y}$$
 is continuous for $y > 0$ and $\xi \neq 2$



yto.