

$$\frac{dy}{dt} = f(t, y)$$

$$t^2 - y \quad t, y$$

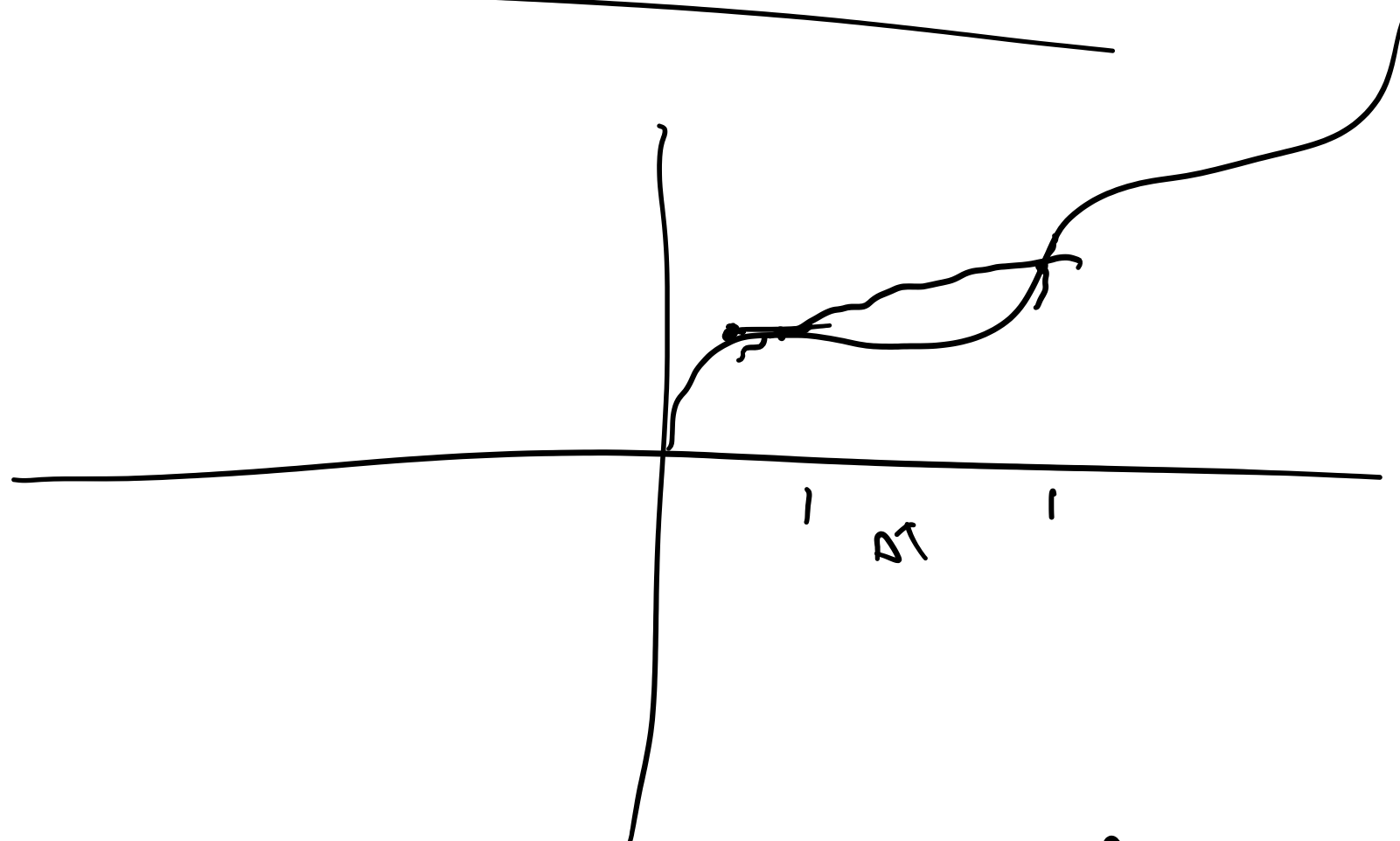
$$y_{n+1} = y_n + \Delta t f(t, y)$$

$$f(x-a) = f(a) + \frac{f'(a)(x-a)}{1} + \frac{f''(a)(x-a)^2}{2} + \dots$$

$$\Delta x \rightarrow \Delta t$$

$$f(\Delta t) = f(a) + \frac{f'(a)\Delta t}{1} + \frac{f''(a)\Delta t^2}{2}$$

Modify Euler's Method



$$y_{n+1} = y_n + \Delta t (f(t_n, y_n) + f(t_{n+1}, y_{n+1}))$$