

A

$$\frac{du}{dt} = u^q, \quad t \in [0, 10]$$

$$\frac{du}{u^q} = dt$$

si  $q = 1$ ,  $\ln u = t + c$

$$u(t) = e^{t+c} = Ae^t$$

si  $q < 1$   $\int u^{-q} du = dt$

$$-\frac{u^{-q+1}}{q-1} = t + c$$

$$u^{1-q} = (1-q)(t+c)$$

$$u = [(1-q)(t+c)]^{\frac{1}{1-q}}$$

$$(1-q)(t+c) > 0$$

$$(t+c) > 0$$

$$c > -10 \quad \checkmark$$

Una solución particular es:

$$u = [(1-q)t + 1]^{\frac{1}{1-q}}$$

$$u(0) = 1$$