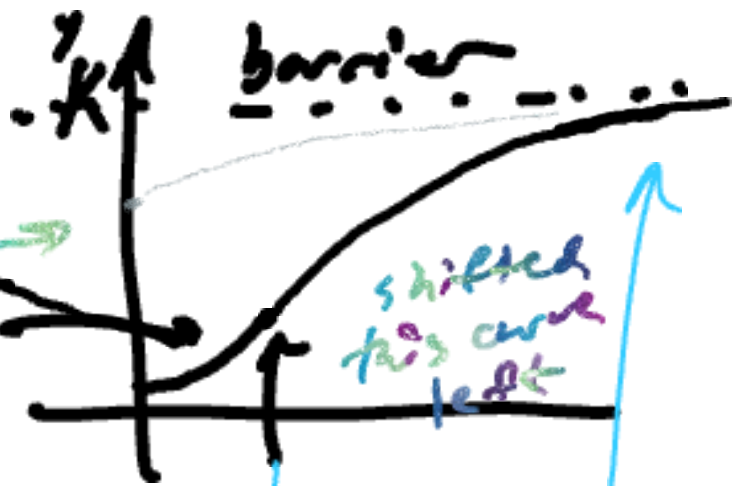


When y is small, the DE is

$$\frac{dy}{dt} \approx by$$

roughly

Soln is exponential



If y starts large,

$$\frac{dy}{dt} \approx by \left(1 - \frac{y}{K}\right)$$

exponential behavior

If it starts exponentially it has to

"turn over" (inflection point)

Very little change

$$\left(\frac{dy}{dt} \approx 0\right)$$

Autonomous - no explicit dependence on time.

Non-Autonomous - time appears

$$\frac{dy}{dt} = b(1 + c \cdot \sin(2\pi t)) y \left(1 - \frac{y}{K}\right)$$

Creates oscillations, as y tends toward K .