

Model Differential Equation Form Integrated Form Linearized Form Units of b

Exponential

$$\boxed{\frac{dy}{ds} = -by} \quad y = ae^{-bs} \quad \ln(y) = \ln(a) - bs \quad s^{-1}$$

Power

$$\frac{dy}{ds} = \frac{-by}{s} \quad y = as^{-b} \quad \ln(y) = \ln(a) - b \ln(s) \quad \text{none}$$

C

$$\frac{dy}{ds} = -b(1-y) \quad y = 1 - ae^{bs} \quad \ln\left(\frac{1}{1-y}\right) = -\ln(a) - bs \quad s^{-1}$$

D

$$\frac{dy}{ds} = -by(1-y) \quad y = \frac{1}{1+ae^{bs}} \quad \ln\left(\frac{y}{1-y}\right) = -\ln(a) - bs \quad s^{-1}$$

E

$$\frac{dy}{ds} = \frac{-b(1-y)}{s} \quad y = 1 - as^b \quad \ln\left(\frac{1}{1-y}\right) = -\ln(a) - b \ln(s) \quad \text{none}$$

F

$$\frac{dy}{ds} = \frac{-by(1-y)}{s} \quad y = \frac{1}{1+as^b} \quad \ln\left(\frac{y}{1-y}\right) = -\ln(a) - b \ln(s) \quad \text{none}$$

Cauchy

$$y = \frac{2}{\alpha\pi} \left(\frac{1}{1 + \left(\frac{s}{\alpha}\right)^2} \right)$$