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df(t) / dt = r f(t) (1 - f(t)/K), f(0) = p_0.

Extended Keyboard

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Examples

Random

Input interpretation:

$$\left\{ \frac{\partial f(t)}{\partial t} = r f(t) \left(1 - \frac{f(t)}{K} \right), f(0) = p_0 \right\}$$

ODE names:

Separable equation

$$-\frac{f'(t)}{\frac{f(t)(-K+f(t))}{K}} = r$$

Bernoulli's equation

$$f'(t) = r f(t) - \frac{r f(t)^2}{K}$$

[Bernoulli's equation »](#)

ODE classification:

first-order nonlinear ordinary differential equation

Alternate forms:

$$\left\{ f'(t) = -\frac{r f(t) (f(t) - K)}{K}, f(0) = p_0 \right\}$$

$$\left\{ f'(t) = r \left(f(t) - \frac{f(t)^2}{K} \right), f(0) = p_0 \right\}$$



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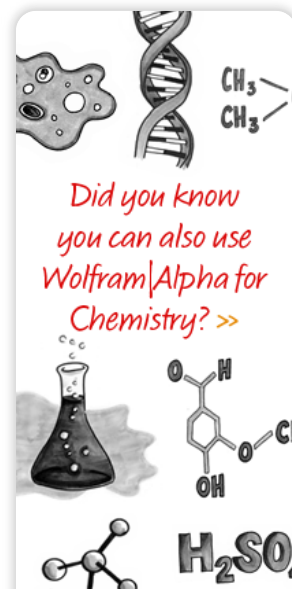


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Expanded form:

$$\left\{ f'(t) = r f(t) - \frac{r f(t)^2}{K}, f(0) = p_0 \right\}$$


Differential
equation
solution:[Approximate form](#)☒ [Step-by-step solution](#)

$$f(t) = \frac{\xi p_0 e^{rt}}{\xi + p_0 (e^{rt} - 1)}$$

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Related Queries:

- = $y^0 + y'^1 + y''^2 = 1$
- = $4 y'''' + 3 y''' + 2 y'' + y' \dots$
- = differential equation na...
- = what is the average pri...
- = $y'' = y/y'$

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