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solve $y''-y=a \cosh(tx)$



 NATURAL LANGUAGE

 MATH INPUT

 EXTENDED KEYBOARD

 EXAMPLES

 UPLOAD

 RANDOM

Input interpretation

solve $y''(x) - y(x) = a \cosh(t x)$

$\cosh(x)$ is the hyperbolic cosine function

Result

 Step-by-step solution

$$y(x) = \frac{a \cosh(t x)}{t^2 - 1} + c_1 e^x + c_2 e^{-x}$$

ODE classification

second-order linear ordinary differential equation

Alternate forms

$$a \cosh(t x) + y(x) = y''(x)$$

$$y''(x) - y(x) = \frac{1}{2} a e^{-t x} + \frac{1}{2} a e^{t x}$$

Possible Lagrangian

$$\mathcal{L}(y', y, x) = \frac{1}{2} (2 a y \cosh(t x) + y^2 + (y')^2)$$

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Language — the
language that built
Wolfram|Alpha.

Related Queries:

$y' y' + y y'' = y' y''$ $=$ solve $y'(x) = -2 y + x$ ap...

$y'''' + 2 y'''' + 3 y''' + 4 \dots$ $=$ solve $\{y'(x) = -2 y, y(0) \dots$

$= y'' = \text{lambertW}(y')$





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