

Find the general solution for the following differential equation:

$$ty' + y = 6t \cos(t)$$

$$y(t) = \left(6 \left(\frac{e^{-t} \sin(t) - e^{-t} \cos(t)}{2} \right) + c \right) \cdot e^{-t}$$

If you don't get this in 5 tries, you can get a hint.

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$$\frac{ty' + y}{t} = \frac{6t \cos t}{t}$$

$$y' + \frac{y}{t} = 6 \cos t$$

$$\textcircled{7} \quad y' + \frac{1}{t} \cdot y = 6 \cos t \quad //$$

y_1

Linear

$$y' + p(t)y = f(t)$$

any function involving t and numbers

$$p(t) = \frac{1}{t} \quad \checkmark$$