

$$y''' = 2xy''$$

$$t := y'' \quad t' = y'''$$

$$t' = 2xt$$

$$\frac{t'}{t} = 2x$$

$$\ln |t| = x^2 + C$$

$$|t| = e^{x^2} + e^C$$

$$t = \pm(e^{x^2} + e^C)$$

$$y'' = \pm(e^{x^2} + e^C)$$

$$a := y'$$

$$a' = \pm(e^{x^2} + e^C)$$

$$a = \pm \int (e^{x^2} + e^C) dx$$

$$a = \pm \left(\int e^{x^2} dx + xe^C \right)$$

$$y' = \pm \left(\int e^{x^2} dx + xe^C \right)$$

$$y = \pm \int \left(\int e^{x^2} dx + xe^C \right) dx$$

$$y = \pm \left(\int \int e^{x^2} dx dx + \frac{x^2}{2} e^C \right)$$