

$$y' = -2xy$$

$$\int \frac{dy}{y} = -\int 2x dx$$

$$\log |y| = -2 \cdot \frac{x^2}{2} + C$$

$$(y) = e^{-x^2 + C}$$

$$y = e^{-x^2} \cdot A$$

$$y = e^{-x^2}$$

$$y(0) = 1$$

$$1 = A \cdot e^0 = A$$