

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

$$y dy = -x dx$$

$$\int y dy = \int -x dx$$

$$\frac{y^2}{2} + C_1 = -\frac{x^2}{2} + C_2$$

$$\frac{y^2}{2} + C_1 = -\frac{x^2}{2} + C_2$$

$$\begin{aligned}\frac{y^2}{2} &= -\frac{x^2}{2} + C_2 - C_1 \\ &= -\frac{x^2}{2} + C_3\end{aligned}$$

$$\sqrt{2 \cdot \frac{y^2}{2}} = \sqrt{2 \cdot \left(-\frac{x^2}{2} + C_3\right)}$$

$$y = \sqrt{2C_3 - x^2}$$

$$= \sqrt{C_4 - x^2}$$