

$$\frac{dy}{dx} = \frac{x^3 - 2y}{x} \quad y' = x^2 - \frac{2}{x}y \Rightarrow y' + \frac{2}{x}y = x^2$$

$$y' + p(x)y = Q(x)$$

$$\text{Integrando: } y = \left[C + \int Q(x) e^{\int p(x) dx} dx \right] e^{-\int p(x) dx}$$

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

$$y(x) = \left[C + \int x^2 e^{2 \ln x} dx \right] e^{-2 \ln x}$$

$$y(x) = \left[C + \int x^2 e^{\ln x^2} dx \right] e^{\ln x^{-2}}$$

$$y(x) = \left[C + \int x^2 x^2 dx \right] x^{-2}$$

$$y(x) = \left[C + \int x^4 dx \right] x^{-2}$$

$$y(x) = \left[C + \frac{x^5}{5} \right] x^{-2}$$

$$y(x) = \frac{C}{x^2} + \frac{x^3}{5}$$