6.

$$\underbrace{2xy - 3x^2y^2}_{M(x,y)} + \underbrace{(x^2 - 2x^3y)}_{N(x,y)}y' = 0$$

$$\left.\begin{array}{l} \frac{dM}{dy} = 2x - 3x^2 \cdot 2y = 2x - 6x^2y \\ \\ \frac{dN}{dx} = 2x - 6x^2y \end{array}\right\} \begin{array}{l}\text{Son iguales, por tanto} \\ \text{es ecuación dif. exacta}\end{array} \quad \exists f \Big/ \begin{array}{l} \frac{df}{dx} = M(x,y) \\ \frac{df}{dy} = N(x,y)\end{array}$$

Como $\frac{df}{dx} = M(x,y) \to \frac{df}{dx} = 2xy - 3x^2y^2 \to f = \int (2xy - 3x^2y^2)\,dx$

$$= 2y\int x\,dx - 3y^2\int x^2\,dx = 2y\frac{x^2}{2} - 3y^2\frac{x^3}{3} + k(y)$$

$$f = x^2y - x^3y^2 + k(y)$$

$$\frac{df}{dy} = x^2 - 2x^3y \to \cancel{x^2 \cdot 1} - \cancel{2x^3y} + k'(y) = \cancel{x^2} - \cancel{2x^3y}$$

$$\downarrow\ k'(y) = 0 \to \underline{k(y) = 0}$$

$$f = x^2y - x^3y^2 \to \boxed{x^2y - x^3y^2 = C}$$

define de forma implícita las soluciones y de las ecuaciones diferenciales CEIR