

Def. The general solution to $\frac{dy}{dx} = f(x, y)$ is a function $y(x)$, containing a parameter (c) , that is a solution for all c , AND, the solution to every IVP with $y(x_0) = y_0$ can be obtained by choosing c correctly.

$$(x^2)(x^3) = x^{2+3} = x^5$$

$$(x^2)^3 = x^{2 \cdot 3} = x^6$$

The Interval of existence of the particular solution to the IVP $\frac{dy}{dx} = f(x, y)$, $y(x_0) = y_0$ is the largest interval $a < x < b$, containing x_0 , on which the solution is defined.