

Rem.: (i) Chosen time  $t$  as the independent variable for convenience... But it could be anything else  $x$ ...

(ii) We seek an entire function

$$\begin{array}{l} \text{Ex.: (1) } \dot{y}(t) = y(t) \\ y(t_0) = y_0 \end{array} \left. \vphantom{\begin{array}{l} \dot{y}(t) = y(t) \\ y(t_0) = y_0 \end{array}} \right\} \text{ IVP}$$

For each value of  $t$  and  $y$  the ODE prescribes the derivative  $\dot{y}$  of the solution

$\rightsquigarrow$  slope fields (also direction field or vector field)

