

## 2.2: Separable Differential Equations

$$3y^2 e^x dy - x^2 dx = 0$$

$$\frac{dy}{dt} = \frac{6t^5 + 1}{\cos(y) + e^y}$$

Solve the IVP  $\frac{dy}{dt} = t^2 + t^2 y^2$ ,  $y(0) = 1$

Given the IVP  $\frac{dx}{dt} = \frac{1 - 2t}{x}$ ,  $x(1) = -2$ :

- Solve explicitly for  $x(t)$ .
- Plot the solution.