

# Implicit Differentiation

- Implicit differentiation allows to find derivatives of functions that are not defined explicitly as a function of a single variable

Steps of implicit differentiation:

1. Treat  $y$  as a differentiable function of  $x$ . Differentiate both sides of the equation with respect to  $x$ .
2. Collect the terms with  $dy/dx$  on one side of the equation.
3. Factor out  $dy/dx$
4. Solve for  $dy/dx$

Examples:

- Finding second derivative implicitly

Example:

**HW:p 153 and p162** Complete as many exercises as you need to feel comfortable using the Chain Rule and the Implicit Differentiation.