

### 3.7 Implicit Differentiation

1. Differentiate both sides with respect to  $x$ .
2. Get all terms with  $dy/dx$  to one side of the equation.
3. Factor out  $dy/dx$ .
4. Solve for  $dy/dx$

Ex 1)  $y = x^2$

Find  $\frac{dy}{dx}$

Ex 2)  $x = y^2$

Find  $\frac{dy}{dx}$

Ex 3)  $2x^3 + 5y^2 = 10$

Find  $\frac{dy}{dx}$ 

Ex 4)  $x^5 + 4y^3 - 2y^2 = 50$

Find  $\frac{dy}{dx}$

Ex 5)  $x^5 + 4xy^3 - 5y^5 = 4$

Find  $\frac{dy}{dx}$