Implicit differentiation

If we differentiate an implicit equation, this is called *implicit differentiation*.

For example, if $x^2 + y^2 = 4$, we can differentiate both sides with respect to x, using the chain rule, and find that

$$2x + 2y\frac{dy}{dx} = 0.$$

This then rearranges to give $\frac{dy}{dx} = -\frac{x}{y}$.