

## Summary: Implicit differentiation

### Implicit functions

Immediately differentiating  $y = x^{m/n}$  is hard. But differentiating the *implicit* function  $y^n = x^m$  was a whole lot easier. This happens any time your function is more simply described implicitly.

An **implicit function** is an equation involving both  $x$  and  $y$  (or any two variables really); you *could* solve for  $y$  as a function of  $x$ , but often times, that computation is messy (or impossible). If a function is not implicit, we say that it is explicit.