# Automatic Differentiation

```
((D (+ cos square)) 'x)
#|
(+ (* 2 x) (* -1 (sin x)))
|#


(define (r x y)
  (sqrt (+ (square x) (square y))))

((D r) 'x 'y)
#|
(down (/ x (sqrt (+ (expt x 2) (expt y 2))))
      (/ y (sqrt (+ (expt y 2) (expt x 2)))))
|#
```