

$$f := x \mapsto \frac{1}{1-x}$$

$$f := x \mapsto \frac{1}{1-x} \quad (1)$$

$$\text{slope} := (x, h) \mapsto \frac{f(x+h) - f(x)}{h}$$

$$\text{slope} := (x, h) \mapsto \frac{f(x+h) - f(x)}{h} \quad (2)$$

h=0.1 for x+h = 2.1

$$\text{slope}(2, .1) \quad 0.9090909090 \quad (3)$$

$$\text{slope}(2, .01) \quad 0.9900990100 \quad (4)$$

$$\text{slope}(2, .001) \quad 0.9990010000 \quad (5)$$

$$\text{slope}(2, .000001) \quad 1.0000000000 \quad (6)$$

Coming in from the left:

$$\text{slope}(2, -.1) \quad 1.1111111110 \quad (7)$$

$$\text{slope}(2, -.01) \quad 1.0101010000 \quad (8)$$

$$\text{slope}(2, -.000001) \quad 1.0000000000 \quad (9)$$

$$\text{slope}(2, .001) \quad 0.9990010000 \quad (10)$$