

$$f := x \rightarrow 3 \cdot x^2 - 5 \cdot x$$

$$f := x \mapsto 3 x^2 - 5 x \quad (1)$$

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

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

$$\text{slope}(3, .1) \quad 13.30000000 \quad (3)$$

$$\text{slope}(3, .01) \quad 13.03000000 \quad (4)$$

$$\text{slope}(3, .0001) \quad 13.00030000 \quad (5)$$

$$\text{slope}(3, -.01) \quad 12.97000000 \quad (6)$$

$$\text{slope}(3, -.001) \quad 12.99700000 \quad (7)$$

$$f := x \rightarrow \frac{(3 \cdot x^2 - 13 \cdot x - 10)}{\text{abs}(x - 5)}$$

$$f := x \mapsto \frac{3 x^2 - 13 x - 10}{|x - 5|} \quad (8)$$

$$f(4.9) \quad -16.70000000 \quad (9)$$

$$f(4.99) \quad -16.97000000 \quad (10)$$

$$f(4.999) \quad -16.99700000 \quad (11)$$

$$f(5.1) \quad 17.30000000 \quad (12)$$

$$f(5.01) \quad 17.03000000 \quad (13)$$

$$f(5.001) \quad 17.00300000 \quad (14)$$

$$f(5.0001) \quad 17.00030000 \quad (15)$$

$$f := x \rightarrow \sin(x)$$

$$f := x \mapsto \sin(x) \quad (16)$$

$$fp := D(f)$$

$$fp := \cos \quad (17)$$

$$L := x \rightarrow fp\left(\frac{\text{Pi}}{3}\right) \cdot \left(x - \frac{\text{Pi}}{3}\right) + f\left(\frac{\text{Pi}}{3}\right)$$

$$L := x \mapsto fp\left(\frac{\pi}{3}\right) \left(x - \frac{\pi}{3}\right) + f\left(\frac{\pi}{3}\right) \quad (18)$$

$$L\left(\frac{62 \cdot \text{Pi}}{180}\right)$$

$$\frac{\pi}{180} + \frac{\sqrt{3}}{2} \quad (19)$$

evalf(%)

$$0.8834786965 \quad (20)$$

$$f\left(\frac{\text{Pi}}{3}\right)$$

$$\frac{\sqrt{3}}{2} \quad (21)$$

evalf(%)

$$0.8660254040 \quad (22)$$