Differentiation Rules

Franco Vidal
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Definition of the derivative

$$f'(x) = \lim_{h \to 0}, . \frac{f(x+h) - f(x)}{h} \tag{1}$$

We can use this definition to compute an derivative without using any other derivative rules

$$f(x) = 2x^2 - 16x + 35 \tag{2}$$

$$f'(x) = \lim_{h \to 0} \frac{2(x+h)^2 - 16(x+h) + 35 - (2x^2 - 16x + 35)}{h} \tag{3}$$