

# Chapter 4 Numerical Differentiation and Integration

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## 4.1 Numerical Differentiation

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The derivative of the function  $f$  at  $x_0$  is

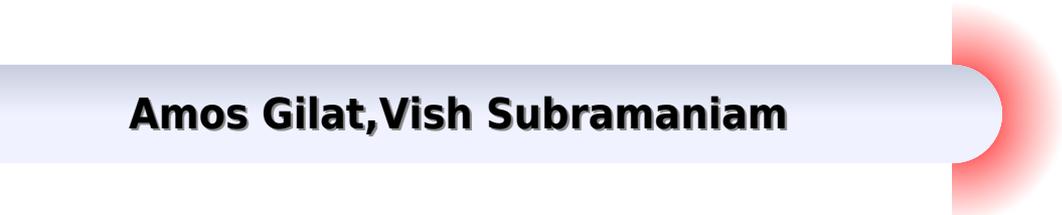
$$f'(x_0) = \lim_{h \rightarrow 0} \frac{f(x_0 + h) - f(x_0)}{h}.$$

This formula gives an obvious way to generate an approximation to  $f'(x_0) = \frac{f(x_0 + h) - f(x_0)}{h}$



# Chapter 4 Numerical Differentiation And Integration

**Amos Gilat, Vish Subramaniam**



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