### 0.1 Syntactically Demanding and Assorted Examples

# 1 Syntactically Demanding

The absolute value of both sides gives

$$|\xi_{n+1}| = \frac{|f''(\xi_n)|}{2|f'(x_n)|} \cdot \xi_n^2$$

and this shows something.

# 2 Assorted

$$a = b$$

$$|\psi\rangle = \int d^3 r \psi(r) |r\rangle$$

$$\hat{A}(r)\psi(r) = \langle r|\hat{A}|\psi\rangle$$

$$f : A \times B \to C$$

$$f(x) = \bar{x} \cdot \tilde{x}$$

$$(\phi \to \langle\alpha\rangle\psi \wedge \psi \to \langle\beta\rangle\chi \to (\phi \to \langle\alpha\beta\rangle\chi)$$

$$\frac{\partial Q}{\partial t} = \frac{\partial s}{\partial t}$$

$$\frac{\partial Q}{\partial t} = \frac{\partial^{kn+2a+c} f}{\partial t}$$

$$\frac{d}{dx}\left(\frac{dy}{dx}\right)$$

$$a \neq b$$

$$a \in A$$

$$\forall x : \exists y : x \in A \Rightarrow r(x, y)$$

$$\sum_{i=1}^{n} i$$

$$\int_a^b f\left(x\right) \frac{d}{dx}$$

$$\sum_{t \in T} f\left(t\right)$$

$$\sum_{i \in A} f_i\left(x\right)$$

$$\sum_{i \in A} f_i\left(x_i^2\right)$$

$$\sum_{i \in A} f^i\left(x_2^i\right)$$