

$f'(x)$  at a real point  $x$  can be defined as the shadow of the quotient  $\Delta y / \Delta x$  for infinitesimal  $\Delta x$ , where  $\Delta y =$

$f(x + \Delta x) - f(x)$ . Here the natural extension of  $f$  to the hyperreals is still denoted  $f$ . Here the derivative is said to exist if the shadow is independent of the infinitesimal chosen.

=== Example ===