



**Results**

**Proposition 1.** *Let  $a \in \mathbf{R}$  and  $f : \mathbf{R} \rightarrow \mathbf{R}$  defined by  $f(x) = a^x$ . Then  $f$  is differentiable and its derivative is the function  $f' : \mathbf{R} \rightarrow \mathbf{R}$  defined by  $f'(x) = \ln(a)a^x$ .*

This proposition encompasses the special case  $f(x) = e^x$  then  $f'(x) = e^x$ .



