

### Definition of the Difference Quotient of a Function

The expression  $\frac{f(x+h) - f(x)}{h}$  for  $h \neq 0$  is called the **difference quotient** of the function  $f$ .

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Example 5: Find and simplify the difference quotient  $\frac{f(x+h) - f(x)}{h}$ , for  $h \neq 0$  for the given function.