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difference quotient

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The *difference quotient*

$$\frac{f(z + \Delta z) - f(z)}{\Delta z}$$

of a <http://planetmath.org/ComplexFunction> complex or real function  $f$  is the ratio of the change of the function to the corresponding change of the variable.

The difference quotient is needed in defining the derivative of the function. In the case of a real function  $f$  the difference quotient may be interpreted as the slope of a secant line of the graph of the function.