

# Some Basic Math

Synferlo

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1.  $\arg \max$  vs.  $\max$

$\max f(x)$  is the maximum value (if it exists) of  $f(x)$  as  $x$  varies through some domain.

$\arg \max f(x)$  is the value of  $x$  at which this maximum is attained.

In short,  $\arg \max$  is the value of  $x$ , while  $\max$  is the value of the function  $f(x)$ .