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Plattsburgh State University, Plattsburgh, NY 12901. *Associativity and the Secant Method.*

Given a continuous function  $f$  from the extended reals to themselves, we define a new 'addition': for numbers  $x$  and  $y$ , let  $L$  be the secant line through the points  $(x, f(x))$  and  $(y, f(y))$  and let  $x * y$  be the number where  $L$  intersects the x-axis. We find and classify all  $f$  such that  $*$  is associative. For an  $f$  such that  $*$  is associative, we derive a closed formula and determine the asymptotic behavior of the iterates of functions of the form  $m(x) = x * c$ . (Received August 08, 2000)