

OS

Development platform

Language

MAC OS

XCODE

C++

$h$	Error in $f'(x=1)$ by Eq. (1) where $f(x) = x^2$	Error in $f'(x=1)$ by Eq. (1) where $f(x) = x^2 + 10^8$	Error in $f'(x=1)$ by Eq. (2) where $f(x) = x^2$	Error in $f'(x=1)$ by Eq. (2) where $f(x) = x^2 + 10^8$
$10^{-1}$	5%	2.24E-08	2.24E-08	2.24E-08
$10^{-2}$	0.50%	2.09E-07	2.09E-07	2.09E-07
$10^{-3}$	0.05%	0.00%	0.00%	0.00%
$10^{-4}$	0.01%	0.00%	0.00%	0.00%
$10^{-5}$	0.00%	0.01%	0.01%	0.01%
$10^{-6}$	5.00E-07	0.16%	0.16%	0.16%
$10^{-7}$	5.05E-08	3.14%	3.14%	3.14%
$10^{-8}$	6.08E-09	25.49%	25.49%	25.49%
$10^{-9}$	8.27E-08	100%	100%	100%
$10^{-10}$	8.27E-08	100%	100%	100%
$10^{-11}$	8.27E-08	100%	100%	100%
$10^{-12}$	0.01%	100%	100%	100%
$10^{-13}$	0.08%	100%	100%	100%
$10^{-14}$	0.08%	100%	100%	100%
$10^{-15}$	11.02%	100%	100%	100%
$10^{-16}$	100%	100%	100%	100%
$10^{-17}$	100%	100%	100%	100%
$10^{-18}$	100%	100%	100%	100%

$h$	Error in $f'(x=1)$ by Eq. (3)	Error in $f'(x=1)$ by Eq. (4)	Error in $f'(x=1)$ by Eq. (5)	$\eta$ by Eq. (6)	$\eta$ by Eq. (7)
$2^{-4}$	6.38%	13.02%	0.26%	2.04082	2.11765
$2^{-5}$	3.16%	6.38%	0.07%	2.02062	2.06061
$2^{-6}$	1.57%	3.16%	0.02%	2.01036	2.03077
$2^{-7}$	0.78%	1.57%	0.00%	2.00519	2.0155
$2^{-8}$	0.39%	0.78%	0.00%	2.0026	2.00778
$2^{-9}$	0.20%	0.39%	0.00%	2.0013	2.0039
$2^{-10}$	0.10%	0.20%	6.36E-07	2.00065	2.00195
$2^{-11}$	0.05%	0.10%	1.59E-07	2.00033	2.00098
$2^{-12}$	0.02%	0.05%	3.97E-08	2.00016	2.00049
$2^{-13}$	0.01%	0.02%	9.93E-09	2.00008	2.00024
$2^{-14}$	0.01%	0.01%	2.48E-09	2.00004	2.00012
$2^{-15}$	0.00%	0.01%	6.21E-10	2.00002	2.00006
$2^{-16}$	0.00%	0.00%	1.55E-10	2.00001	2.00003
$2^{-17}$	0.00%	0.00%	3.88E-11	2.00001	2.00002
$2^{-18}$	0.00%	0.00%	0%	2.00001	2.00001
$2^{-19}$	0.00%	0.00%	0%	2	2.00001

$2^{-20}$	9.54E-07	0.00%	0%	2	2
$2^{-21}$	4.77E-07	9.54E-07	0%	2	2
$2^{-22}$	2.38E-07	4.77E-07	0%	2	2
$2^{-23}$	1.19E-07	2.38E-07	0%	2	2
$2^{-24}$	5.96E-08	1.19E-07	0%	2	2
$2^{-25}$	2.98E-08	5.96E-08	0%	2	2
$2^{-26}$	1.49E-08	2.98E-08	0%	2	2
$2^{-27}$	0%	1.49E-08	1.99E-08	inf	1
$2^{-28}$	0%	0%	0%	nan	inf
$2^{-29}$	0%	0%	0%	nan	nan
$2^{-30}$	0%	0%	0%	nan	nan
$2^{-31}$	0%	0%	0%	nan	nan
$2^{-32}$	0%	0%	0%	nan	nan
$2^{-33}$	0%	0%	0%	nan	nan
$2^{-34}$	0%	0%	0%	nan	nan
$2^{-35}$	0%	0%	0%	nan	nan
$2^{-36}$	0%	0%	0%	nan	nan
$2^{-37}$	0%	0%	0%	nan	nan
$2^{-38}$	0%	0%	0%	nan	nan
$2^{-39}$	0%	0%	0%	nan	nan
$2^{-40}$	0%	0%	0%	nan	nan