

$$f'(p_{(n-1)}) = \lim_{(x \rightarrow p_{(n-1)})} \frac{f(x) - f(p_{(n-1)})}{(x - p_{(n-1)})}$$

$$f'(p_{(n-1)}) \approx \frac{(f(p_{(n-2)}) - f(p_{(n-1)}))}{(p_{(n-2)} - p_{(n-1)})} = \frac{(f(p_{(n-2)}) - f(p_{(n-1)}))}{(p_{(n-2)} - p_{(n-1)})}$$

if $p_{(n-2)}$ is close near $p_{(n-1)}$ then

$$p_n = p_{(n-1)} - f(p_{(n-1)}) \frac{(p_{(n-1)} - p_{(n-2)})}{(f(p_{(n-1)}) + f(p_{(n-2)}))}$$

step	x	f(x)	x(i) - x(i-1)
x 2	-0.6851	-0.45285	0.68507
x 3	-1.2521	-1.64952	0.56700
x 4	-0.8072	-0.16556	0.44487
x 5	-0.8478	-0.05231	0.04058

$p_3 = -1.2521$