

$$f(x) = x^3 - 3x - 2$$

$$x_{k+1} = x_k - f(x_k) \frac{x_k - x_{k-1}}{f(x_k) - f(x_{k-1})}$$

k	x_k	$f(x_k)$
0	1	0 -4
1	4	54 50
2	1.222	-3.841

$$\begin{aligned} \therefore x_2 &= x_1 - f(x_1) \frac{x_1 - x_0}{f(x_1) - f(x_0)} \\ &= 4 - \cancel{54} \times \frac{3}{54} \end{aligned}$$

$$\approx 1.222$$

$$\therefore x_2 = 1.222$$