

Iteration 2

Relabel x_3 as x_2 , x_2 as x_1 and x_1 as x_0
we have $x_0 = 0$, $x_1 = 1$, $x_2 = 0.25 + 1.5612i$

Step I $f(x_0) = -5$, $f(x_1) = -6$, $f(x_2) = -2.0625 - 5.0741i$

Step II $c = f(x_2) = -2.0625 - 5.0741i$

To obtain a , and b

$$\begin{pmatrix} (x_0 - x_2)^2 & x_0 - x_2 \\ (x_1 - x_2)^2 & x_1 - x_2 \end{pmatrix} \begin{pmatrix} a \\ b \end{pmatrix} = \begin{pmatrix} f(x_0) - c \\ f(x_1) - c \end{pmatrix}$$

$$a = -0.75 + 1.5612i, \quad b = -5.4997 - 3.1224i$$

Step III $x_3 = x_2 - \frac{2c}{b - \sqrt{b^2 - 4ca}} = -0.5888 + 1.1910i$

Iteration #3 Again Relabel x_3 as x_2 , x_2 as x_1
and x_1 as x_0

$$x_0 = 1, \quad x_1 = 0.25 + 1.5612i, \quad x_2 = -0.5888 + 1.1910i$$

Step I $f(x_0) = -6$, $f(x_1) = -2.0627 - 5.073i$
 $f(x_2) = -0.5549 + 2.3542i$

Step II $c = f(x_2) = -0.5549 + 2.3542i$

$$\begin{pmatrix} (x_0 - x_2)^2 & (x_0 - x_2) \\ (x_1 - x_2)^2 & (x_1 - x_2) \end{pmatrix} \begin{pmatrix} a \\ b \end{pmatrix} = \begin{pmatrix} f(x_0) - c \\ f(x_1) - c \end{pmatrix}$$