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ELECT-ELECT

EOG 282

Fig 1

① $f(y) = \cos(y)$

$$\cos y = 0$$

$$y_{i+1} = \cos y_i + y_i$$

Guess Value of $y = 0.05$

$$y_{i+1} = \cos(0.05) + 0.05$$

$$= 1.0500$$

when $y = 1.0500$

$$y_{i+1} = \cos(1.05) + 1.05$$

$$\Rightarrow 2.0498$$

when $y_i = 2.0498$

$$y_{i+1} = \cos(2.0498) + (2.0498)$$

$$\Rightarrow 3.04916$$

$$y_i = 3.04916$$

$$y_{i+1} = \cos(3.04916) + 3.04916$$

$$\Rightarrow 4.0477$$

$$y_i = 4.0477$$

$$y_{i+1} = \cos(4.0477) + 4.0477$$

$$\Rightarrow 5.0452$$

②

$$f(x) = e^{-15x} - 2 + \cos(x)$$

$$e^{-15} - 2 + \cos(x) = 0$$

$$-e^{-15x} + \cos(x)$$

$$Z_{i+1} = e^{-15i} + G_s(Z_i)$$

Current value of $Z = 0.1$

$$\begin{aligned} Z_{i+1} &= e^{-15(0.1)} + G_s(0.1) \\ &= 1.223 \end{aligned}$$

(iv) when $Z_i = 1.2231$

$$\begin{aligned} Z_{i+1} &= e^{-15(1.2231)} + G_s(1.2231) \\ &= 0.9998 \end{aligned}$$

(v) when $Z_i = 0.9998$

$$\begin{aligned} Z_{i+1} &= e^{-15(0.9998)} + G_s(0.9998) \\ &= 0.99983 \end{aligned}$$

(vi) when $Z_i = 0.99983$

$$\begin{aligned} Z_{i+1} &= e^{-15(0.99983)} + G_s(0.99983) \\ &= 0.99985 \end{aligned}$$

(vii) when $Z_i = 0.99985$

$$\begin{aligned} Z_{i+1} &= e^{-15(0.99985)} + G_s(0.99985) \\ &= 0.99985 \end{aligned}$$