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Section: CSE06.

Quiz-06.

Ans to the ques no: 9

Here,

(a).

$$f(x) = x^3 - 9x + 1 \quad ; P_0 = 2.7.$$

$$g(x) = (9x - 1)^{1/3}$$

$$g(P_0) = g(2.7) = 2.85618 = \text{1st iteration} = P_1$$

$$g(P_1) = g(2.85618) = 2.91249 = \text{2nd } " = P_2$$

$$g(P_2) = g(2.91249) = 2.93228 = \text{3rd } " = P_3. \quad (\text{Ans})$$

(b).

$$\text{4th iteration.} = g(2.93228) = 2.93916 = P_4.$$

$$\begin{aligned} \text{We know, error bound} &= \text{4th iteration} - \text{3rd iteration. } [P_4 - P_3] \\ &= 2.93916 - 2.93228 \\ &= 6.88 \times 10^{-3} \end{aligned}$$

(Ans).