Numerical Methods in Civil Engineering

Assignment No. 1

1 Bolzand Method

1. Find roots of following equations up to 4 decimal places by using Bolzand (Bisection) Method:

   (a) $x^3 - 3x - 1 = 0$

   (b) $x^3 - x - 7 = 0$

   (c) $x^3 + x^2 + x + 7 = 0$

   (d) $x^3 - 2x - 5 = 0$

   (e) $x^3 - x - 4 = 0$

   (f) $x^3 + 2x^2 + 2.2x - 0.4 = 0$

   (g) $x^3 - 5x^2 + 3 = 0$

   (h) $3x^3 + 8x^2 + 8x + 5 = 0$

   (i) $x - \cos x = 0$

   (j) $2x = \cos x - 3$

   (k) $\tan x + x = 0$

   (l) $xe^x = 1$

   (m) $xe^x = 0$

   (n) $e^x - 3x = 0$

   (o) $xe^x - 2 = 0$

   (p) $3x - \sqrt{1 - sin(x)}$

   (q) $x \log_{10} x = 1.2$

2. Find root of $\sqrt{3}$ correct to 2 decimal places.

2 Regula False Method

Solve 50% problems of section 1 by Regula False Method (The Method of False Position).