BIL108E Introduction to Scientific and Engineering Computing
Lab 7

1. Determine the highest real root of

$$f(x) = x^3 - 6x^2 + 11x - 6.1$$

   a) graphically
   b) using the Newton's Method
   c) using bisection method

2. The volume of liquid V in a hallow horizontal cylinder of radius r and length L is related to the depth of the liquid h by

$$V = \left[r^2 \cos^{-1}\left(\frac{r-h}{r}\right) - (r-h)\sqrt{2rh-h^2} \right] L$$

   Determine h given $r = 2$ *m,* $L = 5$ *m, and* $V = 8\ m^3$.

3. Use fixed-point iteration to solve the following equation with $x_0 = 1$.

$$x = 1 + 0.3 \sin x$$