

Homework 2 of Computational Mathematics

AM15 黃琦翔 111652028

March 22, 2024

1. $x^3 = x + 1 \implies x^2 = 1 + \frac{1}{x} \implies x = \sqrt{1 + \frac{1}{x}} = g(x)$. $p_1 = g(p_0) = \sqrt{1+1} = \sqrt{2} \approx 1.414$. $p_2 = g(p_1) = \sqrt{1 + \frac{1}{\sqrt{2}}} \approx 1.3065$. $p_3 = g(p_2) \approx 1.324$ is the answer that we want to find.

2. Let $a_0 = 1, b_0 = 4$. $f(a_0) = -2, f(b_0) = f(2.5) = 14.125$