

We have a number of ways to rewrite
 $x^3 - x - 1 = 0$
as a fixed problem:

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

b) $x = \sqrt[3]{x+1}$ $g(x) = \sqrt[3]{x+1}$

c) $x^3 = x+1 \Rightarrow x^2 = 1 + \frac{1}{x} \Rightarrow x = \sqrt{1 + \frac{1}{x}}$

$g(x) = \sqrt{1 + \frac{1}{x}}$

d) $x^3 - x = 1 \Rightarrow x(x^2 - 1) = 1 \Rightarrow x = \frac{1}{x^2 - 1}$

$g(x) = \frac{1}{x^2 - 1}$

e) $x = x - \frac{x^3 - x - 1}{3x^2 - 1}$ $g(x) = x - \frac{x^3 - x - 1}{3x^2 - 1}$

n	(a)	(b)	(c)	(d)	(e)
0	1	1	1	1	1
1	0	1.259921	1.41421356	DNE	1.5
2	-1	1.31229384	1.30656297		1.347826
3	-2	1.322353819	1.32867109		1.3252
4	-10	1.32426875	1.32387		1.324718
5	-1001	1.324632625	1.3249		1.324717
6		1.32470175	1.3246787		1.324717
7		1.324714878	1.324726398		1.324717