Ross Miller

1. [1, 2]

From [1,2] is positive so f(x) is increasing exponentially on this interval. When running our procedure with P0 = 1.5 and E = 1e-5 it takes three iterations for Newton’s method and four iterations with Secant’s method (using two iterations to generate P̂n-1, and P̂n-2).

n | Pn | P̂n | P̂n-1 P̂n-2 |

--------------------------------------------------

01 1.34783 0.00000 1.32520 0.00000

02 1.32520 0.00000 1.32520 1.34783

03 1.32472 1.32473 1.32520 1.34783

04 1.32472 1.32472 1.32473 1.32520

A casual examination of the graph of f(x) seems to indicate that our answer is at least approximate.

