Assignment 2

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1 Running mathlib-test

Here is an example of runnig my tests:

```
mkamensk@vera:~/cse13s/asgn2$ ./mathlib-test -a -s
e() = 2.718281828459046, M_E = 2.718281828459045, diff = 0.000000000000000
e term = 17
pi_bbp() = 3.141592653589793, M_PI = 3.141592653589793, diff = 0.000000000000000
pi_bbp() term = 11
pi_viete() = 3.141592653589793, M_PI = 3.141592653589793, diff = -0.000000000000000
pi_viete() factors = 25
pi_euler() = 3.141592558095903, M_PI = 3.141592653589793, diff = -0.000000095493891
pi_euler() terms = 10000000
pi_madhava() = 3.141592653589800, M_PI = 3.141592653589793, diff = 0.000000000000007
pi_madhava() terms = 27
sqrt_newton() = 1.414213562373095, M_SQRT2 = 1.414213562373095, diff = -0.00000000000
sqrt_newton() iteration = 6
```

2 Calculation of PI

These three methods converge really quickly to desired value

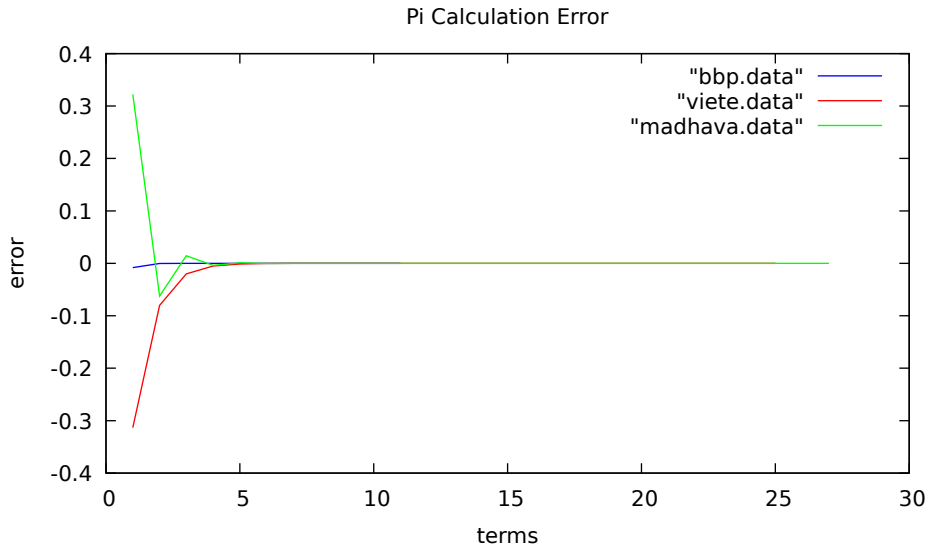

Figure 1: This is Viete BBp and Madhava Pi Calculation Error

But Euler Pi calculation converges really slowely

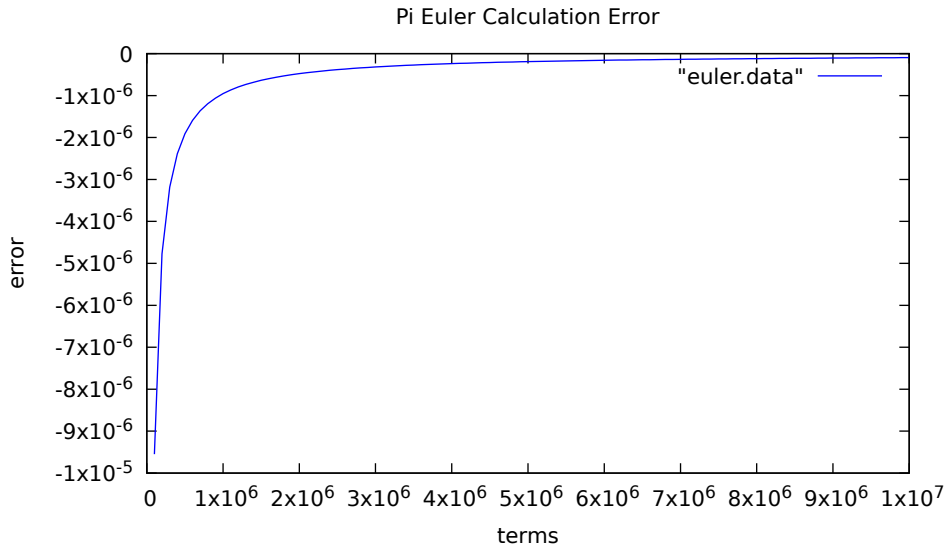

Figure 2: This is Euler Pi Calculation Error

3 Calculation of E

Shows the error clauclation of e()

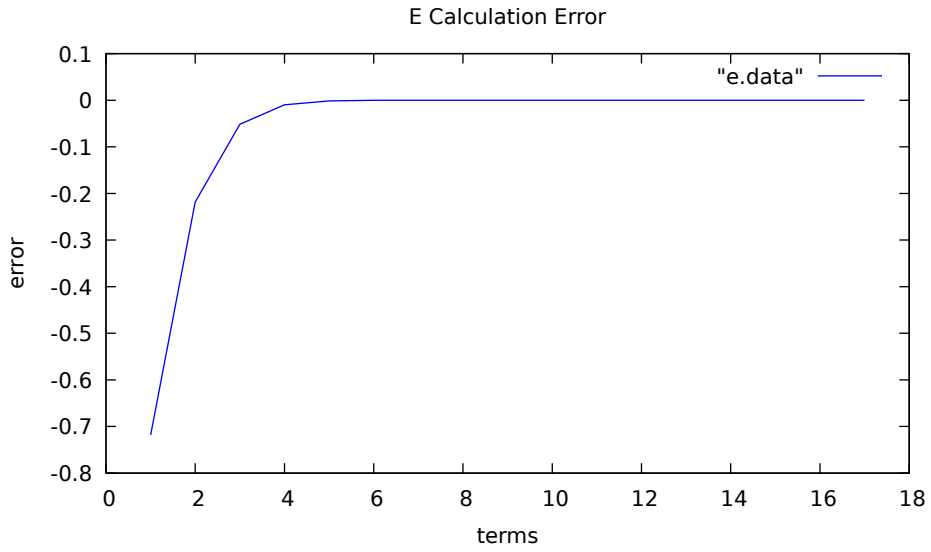

Figure 3: This is Euler E Calculation Error

4 Calculation of Square Root of Two

Shows the error clauclation of Sqrt 2

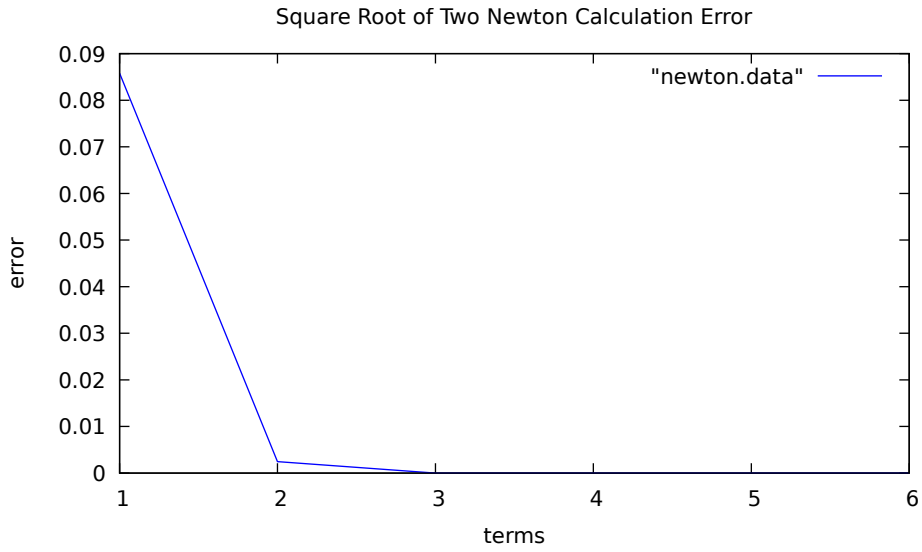

Figure 4: This is Square Root of Two Newton Calculation Error