

```
>> clear
>> main
I want to find the square root of 1000567
My first approximation is 1
I want the error to be less than 0.00001
```

```
ans =
```

```
'The approximation after 14 iterations is 1000.283460 with error in squares 2.374873e-08.'
```

```
The actual square root is 1000.283460, our approximation agrees for 11 digits'
```

```
ans =
```

```
15x4 table
```

Iteration	Approx	Diff_in_Squares	Number_Agree
0	1	1000566	0
1	500284	250283080089	0
2	250142.999999001	62570519881.5	0
3	125073.499989506	15642379832.625	0
4	62540.7499108027	3910344832.40557	0
5	31278.3742758558	977336130.34052	0
6	15655.1816872478	244084146.660738	0
7	7859.5472597163	60771916.127714	0
8	3993.42659655817	14946888.9820982	0
9	2121.99004693178	3502274.75927754	0
10	1296.75649686364	681010.412158064	0
11	1034.1742719798	68949.4248249487	0
12	1000.8387758777	1111.25530037319	1
13	1000.283613884	0.308204839355312	4
14	1000.28345982528	2.37487256526947e-08	11

```
Want to go again (0=yes/ 1=no)?
```