```
>>> from sieve import factor
>>> _ = factor(16921456439215439701, 0.1)
Bound B: 2385
Finding smooth numbers ...
Number of smooth numbers needed is 248
Found smooth numbers in 411ms
Running Gaussian elimination ...
Finished Gaussian elimination in: 584ms
N = 5915587277 * 2860486313
Total time: 1019ms
>>> _ = factor(46839566299936919234246726809, 0.01)
Bound B: 4857
Finding smooth numbers ...
Number of smooth numbers needed is 411
Found smooth numbers in 6442ms
Running Gaussian elimination ...
Finished Gaussian elimination in: 2772ms
N = 468395662504823 * 100000000105583
Total time: 9279ms
>>> _ = factor(37448430805296159090191815103305542055009260219
47, 0.005)
Bound B: 109537
Finding smooth numbers ...
Number of smooth numbers needed is 5268
Found smooth numbers in 18216988ms
Running Gaussian elimination ...
Finished Gaussian elimination in: 7635752ms
N = 112345666789098766543211 * 333332222555555557777777777
Total time: 25865137ms
>>> _ = factor(6172835808641975203638304919691358469663, 0.005)
Bound B: 29006
Finding smooth numbers ...
Number of smooth numbers needed is 1654
Found smooth numbers in 2110265ms
Running Gaussian elimination ...
Finished Gaussian elimination in: 244575ms
N = 11111111111111111011 * 555555222777777773333
Total time: 2356390ms
>>>
```

Above are the results of factoring the four numbers in the assignment writeup. Each time the program runs, it prints out when it has reached a few milestone points in the quadratic sieve, as well as the final factorization and the running time.