Euler-Mascheroni Constant using Texas Instruments Basic

Most graphing calculators include a simple programming language. The discussion problem from the first lecture may be solved using a TI-81 with the code

```
Prgm1: HN
:1000→N
:0→H
:N→K
:Lbl 1
:H+1/K→H
:DS<(K,1)
:Goto 1
:Disp "GAMMA"
:H-ln N→G
:Disp G
```

This program produces the output

```
Prgm1
GAMMA
      .5777155816
```

in 15.03 seconds for a resulting speed of 133 FLOPS.

Interestingly, all models of Texas Instruments graphing calculators from the TI-81 up to and including the TI-86 are based on the same Z-80 processor used in many of the first 8-bit home computers, which unsurprisingly perform at about the same speed. As a result, the Intel Xeon E5-2620 based test machine considered in the introductory lecture is about 32 million times faster than the first home computers. For extra credit, figure out a way to perform this same computation on your cell phone.