**Test case 1: x = 2.5**

parallels@ubuntu:~/Assembly/HarmonicSeries$ ./compiler\_euler

Welcome to harmonic series by Art Grichine!

The program will compute a partial sum of the harmonic series.

These results were obtained on a MacBook Pro (late 2013) running Haswell i7 at 2.6GHz.

Please enter a positive real number X: 2.5

The smallest harmonic sum ≥ X is being computed.

The clock time before the calculations began was 9544090129712.

The clock time after completion of calculations was 9544090187372.

The harmonic computation required 57660 clock cycles (tics) which is 22176.9 ns or 0.00002218 seconds.

The harmonic sum is 2.50, which required the addition of 7 terms.

The driver received this value: 2.50

The driver will return 0 to the operating system. Enjoy your programming.

There's no fun greater than X86-64 programming

**Test case 2: x = 4.0**

parallels@ubuntu:~/Assembly/HarmonicSeries$ ./compiler\_euler

Welcome to harmonic series by Art Grichine!

The program will compute a partial sum of the harmonic series.

These results were obtained on a MacBook Pro (late 2013) running Haswell i7 at 2.6GHz.

Please enter a positive real number X: 4.0

The smallest harmonic sum ≥ X is being computed.

The clock time before the calculations began was 9551540115274.

The clock time after completion of calculations was 9551540173152.

The harmonic computation required 57878 clock cycles (tics) which is 22260.8 ns or 0.00002226 seconds.

The harmonic sum is 4.00, which required the addition of 31 terms.

The driver received this value: 4.00

The driver will return 0 to the operating system. Enjoy your programming.

There's no fun greater than X86-64 programming

**Test case 3: x = 5.0**

parallels@ubuntu:~/Assembly/HarmonicSeries$ ./compiler\_euler

Welcome to harmonic series by Art Grichine!

The program will compute a partial sum of the harmonic series.

These results were obtained on a MacBook Pro (late 2013) running Haswell i7 at 2.6GHz.

Please enter a positive real number X: 5.0

The smallest harmonic sum ≥ X is being computed.

The clock time before the calculations began was 9561044781580.

The clock time after completion of calculations was 9561044839276.

The harmonic computation required 57696 clock cycles (tics) which is 22190.8 ns or 0.00002219 seconds.

The harmonic sum is 5.00, which required the addition of 83 terms.

The driver received this value: 5.00

The driver will return 0 to the operating system. Enjoy your programming.

There's no fun greater than X86-64 programming

**Test case 4: x = 7.5**

parallels@ubuntu:~/Assembly/HarmonicSeries$ ./compiler\_euler

Welcome to harmonic series by Art Grichine!

The program will compute a partial sum of the harmonic series.

These results were obtained on a MacBook Pro (late 2013) running Haswell i7 at 2.6GHz.

Please enter a positive real number X: 7.5

The smallest harmonic sum ≥ X is being computed.

The clock time before the calculations began was 9579535130772.

The clock time after completion of calculations was 9579535188356.

The harmonic computation required 57584 clock cycles (tics) which is 22147.7 ns or 0.00002215 seconds.

The harmonic sum is 7.50, which required the addition of 1015 terms.

The driver received this value: 7.50

The driver will return 0 to the operating system. Enjoy your programming.

There's no fun greater than X86-64 programming

**Test case 5: x = 8.5**

parallels@ubuntu:~/Assembly/HarmonicSeries$ ./compiler\_euler

Welcome to harmonic series by Art Grichine!

The program will compute a partial sum of the harmonic series.

These results were obtained on a MacBook Pro (late 2013) running Haswell i7 at 2.6GHz.

Please enter a positive real number X: 8.5

The smallest harmonic sum ≥ X is being computed.

The clock time before the calculations began was 9586713421412.

The clock time after completion of calculations was 9586713465988.

The harmonic computation required 44576 clock cycles (tics) which is 17144.6 ns or 0.00001714 seconds.

The harmonic sum is 8.50, which required the addition of 2759 terms.

The driver received this value: 8.50

The driver will return 0 to the operating system. Enjoy your programming.

There's no fun greater than X86-64 programming

**Test case 6: x = 10.0**

parallels@ubuntu:~/Assembly/HarmonicSeries$ ./compiler\_euler

Welcome to harmonic series by Art Grichine!

The program will compute a partial sum of the harmonic series.

These results were obtained on a MacBook Pro (late 2013) running Haswell i7 at 2.6GHz.

Please enter a positive real number X: 10.0

The smallest harmonic sum ≥ X is being computed.

The clock time before the calculations began was 9600969881756.

The clock time after completion of calculations was 9600969926092.

The harmonic computation required 44336 clock cycles (tics) which is 17052.3 ns or 0.00001705 seconds.

The harmonic sum is 10.00, which required the addition of 12367 terms.

The driver received this value: 10.00

The driver will return 0 to the operating system. Enjoy your programming.

There's no fun greater than X86-64 programming

**Test case 7: x = 15.0**

parallels@ubuntu:~/Assembly/HarmonicSeries$ ./compiler\_euler

Welcome to harmonic series by Art Grichine!

The program will compute a partial sum of the harmonic series.

These results were obtained on a MacBook Pro (late 2013) running Haswell i7 at 2.6GHz.

Please enter a positive real number X: 15.0

The smallest harmonic sum ≥ X is being computed.

The clock time before the calculations began was 9614397405686.

The clock time after completion of calculations was 9614397462894.

The harmonic computation required 57208 clock cycles (tics) which is 22003.1 ns or 0.00002200 seconds.

The harmonic sum is 15.00, which required the addition of 1835421 terms.

The driver received this value: 15.00

The driver will return 0 to the operating system. Enjoy your programming.

There's no fun greater than X86-64 programming

**Test case 8: x = 20.0**

parallels@ubuntu:~/Assembly/HarmonicSeries$ ./compiler\_euler

Welcome to harmonic series by Art Grichine!

The program will compute a partial sum of the harmonic series.

These results were obtained on a MacBook Pro (late 2013) running Haswell i7 at 2.6GHz.

Please enter a positive real number X: 20

The smallest harmonic sum ≥ X is being computed.

The clock time before the calculations began was 9627803600122.

The clock time after completion of calculations was 9627803657624.

The harmonic computation required 57502 clock cycles (tics) which is 22116.2 ns or 0.00002212 seconds.

The harmonic sum is 20.00, which required the addition of 272400600 terms.

The driver received this value: 20.00

The driver will return 0 to the operating system. Enjoy your programming.

There's no fun greater than X86-64 programming

**Test case 9: x = 24.0**

parallels@ubuntu:~/Assembly/HarmonicSeries$ ./compiler\_euler

Welcome to harmonic series by Art Grichine!

The program will compute a partial sum of the harmonic series.

These results were obtained on a MacBook Pro (late 2013) running Haswell i7 at 2.6GHz.

Please enter a positive real number X: 24.0

The smallest harmonic sum ≥ X is being computed.

The clock time before the calculations began was 9636165094898.

The clock time after completion of calculations was 9636165139276.

The harmonic computation required 44378 clock cycles (tics) which is 17068.5 ns or 0.00001707 seconds.

The harmonic sum is 24.00, which required the addition of 14872568831 terms.

The driver received this value: 24.00

The driver will return 0 to the operating system. Enjoy your programming.

There's no fun greater than X86-64 programming

**Test case 10: x = 30.0**

parallels@ubuntu:~/Assembly/HarmonicSeries$ ./compiler\_euler

Welcome to harmonic series by Art Grichine!

The program will compute a partial sum of the harmonic series.

These results were obtained on a MacBook Pro (late 2013) running Haswell i7 at 2.6GHz.

Please enter a positive real number X: 30.0

The smallest harmonic sum ≥ X is being computed.

The clock time before the calculations began was 9647808646146.

The clock time after completion of calculations was 9647808703638.

The harmonic computation required 57492 clock cycles (tics) which is 22112.3 ns or 0.00002211 seconds.

The harmonic sum is 30.00, which required the addition of 6000022499693 terms.

The driver received this value: 30.00

The driver will return 0 to the operating system. Enjoy your programming.

There's no fun greater than X86-64 programming

**LETS KEEP GOING:**

**X=35:**

parallels@ubuntu:~/Assembly/HarmonicSeries$ ./compiler\_euler

Welcome to harmonic series by Art Grichine!

The program will compute a partial sum of the harmonic series.

These results were obtained on a MacBook Pro (late 2013) running Haswell i7 at 2.6GHz.

Please enter a positive real number X: 35

The smallest harmonic sum ≥ X is being computed.

The clock time before the calculations began was 12475869371554.

The clock time after completion of calculations was 12475869415794.

The harmonic computation required 44240 clock cycles (tics) which is 17015.4 ns or 0.00001702 seconds.

The harmonic sum is 35.00, which required the addition of 890482293866034 terms.

The driver received this value: 35.00

The driver will return 0 to the operating system. Enjoy your programming.

There's no fun greater than X86-64 programming

**X=40:**

parallels@ubuntu:~/Assembly/HarmonicSeries$ ./compiler\_euler

Welcome to harmonic series by Art Grichine!

The program will compute a partial sum of the harmonic series.

These results were obtained on a MacBook Pro (late 2013) running Haswell i7 at 2.6GHz.

Please enter a positive real number X: 40

The smallest harmonic sum ≥ X is being computed.

The clock time before the calculations began was 12483900146926.

The clock time after completion of calculations was 12483900191974.

The harmonic computation required 45048 clock cycles (tics) which is 17326.2 ns or 0.00001733 seconds.

The harmonic sum is 40.00, which required the addition of 132159290357567120 terms.

The driver received this value: 40.00

The driver will return 0 to the operating system. Enjoy your programming.

There's no fun greater than X86-64 programming

**X=44.2:**

parallels@ubuntu:~/Assembly/HarmonicSeries$ ./compiler\_euler

Welcome to harmonic series by Art Grichine!

The program will compute a partial sum of the harmonic series.

These results were obtained on a MacBook Pro (late 2013) running Haswell i7 at 2.6GHz.

Please enter a positive real number X: 44.2

The smallest harmonic sum ≥ X is being computed.

The clock time before the calculations began was 12499694117602.

The clock time after completion of calculations was 12499694175394.

The harmonic computation required 57792 clock cycles (tics) which is 22227.7 ns or 0.00002223 seconds.

The harmonic sum is 44.20, which required the addition of 8813218186917735424 terms.

The driver received this value: 44.20

The driver will return 0 to the operating system. Enjoy your programming.

There's no fun greater than X86-64 programming

**X=44.3 (register overflow):**

parallels@ubuntu:~/Assembly/HarmonicSeries$ ./compiler\_euler

Welcome to harmonic series by Art Grichine!

The program will compute a partial sum of the harmonic series.

These results were obtained on a MacBook Pro (late 2013) running Haswell i7 at 2.6GHz.

Please enter a positive real number X: 44.3

The smallest harmonic sum ≥ X is being computed.

The clock time before the calculations began was 12509966145798.

The clock time after completion of calculations was 12509966203750.

The harmonic computation required 57952 clock cycles (tics) which is 22289.2 ns or 0.00002229 seconds.

The harmonic sum is 44.30, which required the addition of -9223372036854775808 terms.

The driver received this value: 44.30

The driver will return 0 to the operating system. Enjoy your programming.

There's no fun greater than X86-64 programming