

Apery's Constant Competition

Apery's Constant is simply the sum of the reciprocals of the cubes, that is,

$$1/(1^3) + 1/(2^3) + 1/(3^3) + 1/(4^3) + \dots$$

That is,

$$1 + 1/8 + 1/27 + 1/64 + \dots$$

which equals 1.202056903159594....

I'm offering a prize of a bottle of champagne (or an equivalent monetary prize, if the winner prefers) for the NEATEST closed-form approximation to Apery's Constant.

Entries must be received by 12pm (midday) GMT on 12th May 2018. The winner will be determined entirely by me, so will be very subjective.

By closed-form is meant that the entry cannot contain summation signs, or integral signs, or anything of their ilk.

Let me give you two examples of mine that are NOT neat, and would not win.

$(5860987 / 151180351) * \pi^3$ is accurate to 14 decimal places, but is not neat because it uses huge numbers. And of course if one is allowed to use larger and larger numbers, one can get as close as one likes!

$(436 \ln(3) + 25 \sqrt{5}) / 720 * \phi$, where $\ln(3)$ is the natural logarithm of 3, $\sqrt{5}$ is the square root of 5, and ϕ is the golden ratio, is quite neat, because the largest number it uses is only 3 figures, but alas is only accurate to 8 decimal places.

Please feel free to advertise this competition amongst friends, enemies, etc.

Entries can either be posted publicly to the Yahoo! Group at <https://groups.yahoo.com/neo/groups/UnsolvedProblems/> or emailed to me privately at timro21@gmail.com.

Tim