

Eli we have encountered another Chance Meeting. We see it in Figure S3.1 of your book on the 4000 year old formula.

As you may recall, I am able to show that the infinite sum

$$S(n)/Zeta(n)$$

converges to

$$\pi/(\text{square root of } 6) \quad \text{for } n = 2.$$

That is, it converges to the square root of the Zeta.

I was able to show it by using the properties of $S(n)$, which I will write up in some detail.

So, if YOU were living not in 2021, but in 1734, you might have been right on top of the solution for the Basel Problem whose solution came from our old friend Leonard Euler. I would have been in line to congratulate you. You would not violate any of the rules of the infinite as Euler did and later corrected, I think.

He was free and easy and treated infinite things like terms that he could use in algebra.. I think Euler corrected that over a short period of time. The original proof is in 'Journey 'Through Genies' by Dunham, I think. My books are in Southampton.

I have an eerie feeling about the serendipity of your Sidebar and my $S(n)$. I have to be careful and not let numbers become too friendly.

For example, I have a close relationship with the number .707 I see it all too often. It is on clocks to remind me. Of course if you plotted my times looking at clocks, the mystery would disappear as 7:07 am and 7:07 pm are active times for me requiring my attention to schedules.

But $\pi/(\text{square root of } 6)$ is telling me to look deeper. It's like 1729 ... it is something special.