

# The big bang, the primes, and the RH

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Imagine an array of squares leading off to infinity.  
Now let me ask what is the the probability of picking a particular square at random from the first N.

From the first N, the probability is just 1/n, but for the rest, the

probability must be 1 because there is an infinite array. So let me assign this Probability function:

$$p(n)=(1+1/n)^n$$

Of course, this function makes no sense and cannot possibly be accurate. For finite n, this is true. However, as n increases to infinity, this function tends to  $e^{\infty}$ , and i submit it makes perfect sense. As n increases to infinity, the probability of picking the middle square tends to 1/2.

Now, let me ask this question for the plane.  
Draw a unit square at the origin

... 15 14  
5 4 3 13  
6 1 2 12  
7 8 9 11  
10...

Draw a circle around 1 call this  $1/\zeta(\infty)$   
....

As the area of the unit square used to draw the spiral tends to 0, the integers are mapped to the plane.  
The integers  $\leq k^2$  are always bound by the circle created by  $1/\zeta(\infty-k)$ .

Let the radius of the circle  $1/\zeta(\infty) = 1$ .

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Now, what happens if we consider another circle with radius  $1/\sqrt{\pi \cdot n}$

We can say that the area of the unit circle is:

$$f(n) = (1 + 1/n)^n$$

Of course, this function fails for finite  $n$ , but as  $n \rightarrow \infty$   $f(n) \rightarrow 1$

But what does this tell us about the primes?

In the ulam spiral unit circle, the square free integers are symmetric about  $1/\zeta(2)$ . Euler has shown this. The 'probability' of picking a square free rational is symmetric around  $1/\zeta(2)$  because in ulam spiral space, ALL of the square free rationals between 0 and 1 lie on the circle with radius  $1/\zeta(2)$ . How do we know this? Euler has proven that the sum of the square free rationals 'inside' the circle is equal to the sum 'outside' the circle, namely 0.

All of the cube free rationals lie on the circle  $1/\zeta(3)$ .

Now, I ask you. Where do the primes lie in ulam spiral space?

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