JSH: Objectivity, linking hyperbolas

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Now I like focusing on the surrogate factoring theorem because it is a theorem that is proven with techniques that are simple enough that I don't have to worry about arguing over whether or not it's true.

I've noted it links two hyperbolas, which moves the discussion away from number theory and also may raise questions about such a linkage and its value.

Like, linking hyperbolas isn't necessarily a big deal, like

$x_1 y_1 = 1$

and

$x_2 y_2 = 7$

both give hyperbolas and I can link one to the other by multiplying x_1 and y_1 in various ways by 7, like multiply both by sqrt(7).

That's a link, though a trivial one, and it can be explored rather easily as to how that link occurs and how the mapping occurs such that if you graph the first hyperbola, you know how the second would graph−−point by point in response−−as long as you used consistent rules.

What makes the SFT such beautiful mathematics is that no one has put forward how it maps so that you can explain it so simply.

My guess is that it maps by number theoretic properties related to the prime factorization of some key numbers that are not your target or helper numbers.

So, if you graph using the SFT, the way the second hyperbola builds could be something rather dramatic.

Like a dot here, and a dot there in a pattern that defies explanation, as building one hyperbola in a regular manner, you see an extraordinary pattern of dots build the second until it fills up enough to look continuous.

The issue is, how does the SFT map?

There are posters who are trying to argue a trivial mapping, not unlike what I mentioned with

x_1 y_1 = 1

and

x_2 y_2 = 7

where if you just map by, say, multiplying x_1 and y_1 by sqrt(7) then you can predict at what rate you will get particular factors.

Since 7 is prime, let me pick a composite, like

x_2 y_2 = 15

and, imagine you map by multiplying x_1 by 3 and y_1 by 5, which means you have the factorization up front.

Get the idea?

With a simple linkage you can easily tell how factors will emerge without debates about frequency of trivial versus non−trivial factors in rationals.

But with the SFT, it's a mystery, with people already taking sides.

I say, it's a mystery, but it looks to me like the answer is that the math isn't picky, and will factor 50% of the time, but I'm not certain.

Others say, it's trivial and it factors trivially, and it's all just trivial so shut up about trivial stuff.

Partly with a post like this one I want to excite in some of you a sense of the mystery, and some curiousity to ask, what is t