Here is a study in arithmetic.

I came upon some recent work on Twin Primes. I pondered them a long time ago. It was all trivial as I did not get a real bite into the problem. ***Are there an infinite number of prime pairs ?*** ... numbers that differ by 2 with no factors other than 1 and themselves … like 5 & 7, 11, 13, 17, 19, 29, 31 .... That is the conjecture. Numbers like 360,287 and 360,289 are twin primes.

Recently some theorists have done fine good work on the Twin Prime Conjecture. Some of it is based upon studying the composite integers and their distributions in long strings. It's quite beautiful path to take.

The composites and their distributions are vital to cryptography algorithms. In encryption/decryption we want to find very large primes quickly. If we run into a very long string of composites the algorithms take too long to run. This is a flaw in the algorithms that may not be easily overcome. So we ask: Where are the next sufficiently large primes located and what are their values? In particular what is their relationship one to another.

Constructing huge lists of ordered composites is quite easy. Here is one way to construct 100 composite numbers or by extension a list of any length of composite numbers.

Start with the numbers 2,3,4,5, ...

Add to each number let's say 101!

We form the list:

101!+2,

101!+3,

101!+4,

101!+5,

etc ....

All of these are of course composite being divisible by 2,3,4,5 ….

The current bounded distance minimum for an infinite number of prime pairs on the number line between two primes is now down to 246. It was 70,000 in 2003. Can it be reduced to 2 or is another approach required? The elusive Prime Pair Puzzle remains unsolved.

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