Chapter 14 Future Mathematicians

This Chapter is for those parents or teachers who might have a precocious math student who might wish to consider a career in mathematics. This will not be an easy chapter for people not well educated in mathematics.

But, it will give a layman an idea of what is needed for those relatively few precocious students who are potential mathematicians.

Short Changing our Best Math Students

What is more important to us as parents and educators than delivering an adequate education to our students? Very few things I would say.

Until this 21st Century, the best we could do is what we are doing today. Batch teaching in our massive school "factories". A Second Wave approach.

Today, our modern technologies empower us to deliver a Third Wave type of education that is vastly superior in virtually all ways to our current system, . . . and more cost effective too.

But, what this means for our brightest and best math students is even more dramatic.

And, it may one of the most important things we can do for the long term health of our society..

Imagine that we did not have youth sports activities, both in and out of our school systems. No Little League, or Junior Football. Suppose our athletes had to wait until their late teen years to obtain good sports education and coaching. How good would our best athletes be?

Same for music. Suppose we did not start teaching music to a future musician until s/he was in late teens or twenties.

Here are some Concepts we should be teaching our future mathematicians. This can be done for a precosious student very early in their life.

1. The Axiomatic Method and Rigorous Number Systems
      Natural, Rational, Real, Complex, Hyperreals, ETC.

2. Math Models
      Algebraic, Geometric, Topological, Linear Algebra, ETC.

3. Modern Math Structures
      Topology, Groups, Fields, Hilbert Spaces, ETC.

4. Chaos and Non-linear Dynamics Extremely important for Science

5. Spectral Logic   Basis of modern control systems.
      Propositions can be assigned truth values between 0 and 1.

6. Fractals and non-integral dimension

7. Infinity   Many sizes of Infinite sets. $\#X < \#P(X)$

8. Axiom of Choice and Zorn's Lemma

9. Infinitesimals   Archimedes to Robinson 1966

10. Impact of Modern Math on Science

11. The Black Swan and risk analysis

12. Other topics TBA

Of course, "Man Plans and God Laughs" is my favorite Mantra.

So who knows if this will ever happen?

    It might depend on you, and The Homeschoolers Tribe reaction to this situation. Bring on the Math Prodigies.