

Parents, grandparents, counselors, faculty, staff, and students,

This is a special year ... for me too. It is the 25th year of the founding of these independent camps, beginning with the Canada/USA MathCamp. In the 25-year path, MathPath joined in 2002 -- when internet search engines had not come into their own. And it was precisely the absence of online information that made these camps unique. As the great Mississippi river starts in a trickle in the upper reaches of Minnesota, these camps which started with just one student on the first day of this camp's sibling camp -- in 1993 --, are now four camps, each with more than one student.

[Pause]

As reasonable as the cafeteria food was, the even better nourishment you had here must have been the sweetly imparted knowledge in the classrooms. This has been a month-long math conference in the guise of a summer camp.

MathPath filled you with classes and plenaries on topics one is unlikely to find in school nor will have time for in university - and a month-long math writing workshop and plenaries on the history of math. You would remember MathPath for the overwhelming fun of having previously confusing concepts clarified, of seeing difficult new concepts well-explained, and of finding your tribe.

Going on from here ..., you will eventually specialize in some area, whether mathematics, the sciences, or something else. You will have neither time nor inclination, nor will your mind easily take to a new idea that often spans a whole subject area. So this camp strives to give you a breadth early - in mathematics.

For myself, I believe this: the very best thing I can do is to take the knowledge in my old head and place it in to a new one. I salute those members of the faculty who were able to drive home new concepts to you as well as give you homework, collect it, critique it, and return to you. I am in continued admiration also of Professor Stephen Maurer who, despite the debility that would have prevented ordinary men, strove with undiminished vigor each

class day to make you write mathematics properly, and do proofs as fitting the deductive method that is characteristic of the queen of the sciences.

Yet, as you go from here, the volume of a certain kind of your ignorance is only greater than when you came here. Blaise Pascal said, “Knowledge is like a sphere, the greater its volume, the larger its contact with the unknown.” But this is the better kind of ignorance: you know not [pause] and you know you know not. Your learned ignorance has now increased. You have more questions than you had before. In fact that is how knowledge advances, ... mathematics advances – from answers to questions. From know-how to know-why. In mathematics, standing on existing knowledge, we make conjectures!

The quality of your learned ignorance will in part determine the greatness of your future. And that quality will in part depend on those who help to cause that ignorance. But you get to choose the quality of your future mentors by your quality.

Math is not a gentle game. It takes grit to discover a serious theorem. One day some of you will join me and those other members of the faculty who had the opportunity to discover serious theorems. And some of you might attain the greatness that we could not. But may you have epistemic humility ... may you know that the measure of what you do not know is infinity and it is the same as the measure for anyone else in the world. Thus all people are equal.

I am glad my last name is Thomas – doubting Thomas! If I were to give you one message today, it would be this. Be a humble doubter. Humility to accept that your belief might not be the truth. Being of such a mind should be natural for the mathematician in you that accepts no mathematics as fact unless there is proof. And to know that we ourselves are not as real as we feel we are. Why I say this?

You see, the brain has evolved over the millions of years and is able to interact with the outside world and provide a consistent simulation of the world. Among these consistent simulations is a simulation of itself

- the only simulation day in and day out that we have of ourselves and each human calls it “I” - the phantom presence of a self inside. You see, we do not even know who we are, yet we think we do!

[Pause]

As the great bard wrote:

*“Shall I compare thee to a summer's day?
Thou art more lovely and more temperate”*

Beautiful minds, that is what you are!

The musical productions of Broadway are made by men (and women). You on the other hand are productions of Time. That is, minds like yours are produced only now and then. William Blake said, “Eternity is in love with the productions of Time.”

Thank-you!