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MONT108-N: Mathematics Across Time

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The study of geometry has been around for thousands of years now. Its study has meant very different things to different people. For some, they like to dedicate their lives to it, and learn everything they possibly could. However, for me, geometry holds no real world purpose. I will never study geometry as a job, or even as part of my major at school. No, for me, it is more of way of thinking about the world and learning about our surroundings. Geometry is a type of learning that helps teach logical thinking, going through every step with reasoning behind each step.

The first quote we are given seems to counteract what I personally feel geometry is. When Euclid decides to pay the man, since he needs some gratification out of his learning, Euclid is saying that you learn geometry to learn it. There are no ulterior motives for learning geometry; at least according to Euclid this is true. Geometry is a strange ideal, in which just about everyone today must study it at one point, and yet almost none of them see the real world application of it. Euclid would absolutely hate the way that geometry is taught today, since kids do not care for the study, and will find no purpose for it.

I personally agree with the idea that there is no purpose for it in my life. Euclid can hate me all he wants for disagreeing with him, but I just feel that geometry, although one of the more important mathematics, still does not help me in any way. My mind is based in logic, based in step by step processing. In this way, I am good at math; yet do not care to pursue it in any way. Euclid would like the way that my mind works, but would hate how I disagree with how serious he is in the process.

Geometry is like all mathematics, in that it takes a lot of work to get minimal use out of, if you are not pursuing any math based profession. However, it is a fantastic thing to learn to help with pure logic, particularly Euclid’s teachings. Geometry is based purely in logic, as we have so discussed in class. If people accept the postulates, the definitions, and the common notions, then everything that comes after is true. This is Euclid’s genius.

Euclid’s Elements teaches people in two ways. As everyone clearly knows, it is a textbook in geometry (or at least Book 1 is). However, it also teaches people all about how logic works. Students learning Euclid’s arguments learn the influence of total logic. Every argument that Euclid makes is totally correct. His students learn how powerful a simple step by step process appeal is. Euclid makes no sudden arguments that come out of the blue. Everything he does makes total sense based on the prior arguments that he has declared. Whether or not kids want to study geometry, studying Euclid can teach kids plenty about making arguments.

In this way I find Euclid extremely important to myself. I will never be using proposition three out of book one in my everyday life. To be perfectly honest, I cannot recall any proposition that we have learned, except for proposition four (because I remember the side-angle-side congruency idea from my high school geometry days). I pay attention to the simplistic, yet fantastic, arguments that Euclid makes in proving everything he says. Being on a possible path to becoming a lawyer, seeing how different arguments can be made to prove the same point is extremely important to me. In class, we even did at least one backwards, “assumption” type proof, where we assume something is correct that we know isn’t true, and prove that this can’t be, proving the opposite. All of Euclid’s logic patterns can be a teaching lesson in how to make arguments in multiple different ways.

No matter what I have said about geometry, and how most people have no need for it, it is probably the most useful of all the different kinds of mathematics. While I enjoyed the class very much in high school, how many people really need to know calculus in order to perform their job? That number must be very slim. On the other hand, geometry is used in all sorts of professions. Architects and engineers need a vast knowledge of Euclid’s geometric shapes in order to build what is needed to be built. These planners seem to understand how different shapes are able to hold different amounts of weight just because of how they are shaped. However, these are only the most obvious jobs that use geometry, and there are many others that one may not expect to use geometry.

As I previously mentioned, the average person does not need to understand geometry to function. However, after thinking about it throughout this paper, more and more professions come into my mind that require geometric knowledge. Interior decorating is one that I never really thought of, yet seems so obvious. These decorators must be able to make the most of the space given, no matter what shape, while they (typically) only have to use of rectangular and circular type shapes for furniture. With so many jobs that require geometry as a prerequisite to success in the field, I realize that geometry may be important to a decent amount of professionals today, even if I still feel that I have no need for any math skills beyond arithmetic in my life.

The one problem that I have with all types of math, including geometry, is how narrow-minded people must be sometimes to study math. Yes, to some people, math is highly important in their everyday lives, whereas the average person only needs to know addition, subtraction, multiplication, and division to figure out money issues. Everyone realizes the importance of some math in their lives to go about small tasks. However, in “real” math, there is no room for interpretation, which is difficult for the average person to handle.

Pascal’s quote is the general argument that I was also trying to make in the previous paragraph. Pascal states: “Mathematicians, who are only mathematicians, have exact minds, provided all things are explained to them by means of definitions and axioms; otherwise they are quite inaccurate and insufferable, for they are only right when the principles are quite clear.” What I find interesting is that my mind sort of works in the same way that a mathematician’s works, very logical, and yet I totally agree with what Pascal is stating. Also interesting is that fact that it both supports everything that Euclid stated, yet appears against the majority of mathematicians. Thankfully, for Euclid’s sake, that he uses very simple and seemingly obvious “principles” with which to prove what he wants to prove. He realized that the weaker and fewer principles he started with, the easier it would be to prove things without people disagreeing.

On the other hand, Pascal’s statement is also very true in the mindset of mathematicians. To interpret the quote, Pascal is essentially stating that mathematicians are lost unless everything is explained to them in black and white terms. Anything interpretation goes straight over their heads, as they do not have the mind to be able to process information to get anything but a straight answer. In addition, mathematicians need all the parts put in front of them to get an answer. They cannot infer any of the missing data, and what could be there.

Geometry means different things to different people. To the people who work in some of the job fields that I have mentioned, it is a key component in their job. It is required to be even an average worker in some of these fields. On the other hand, there are people who cannot stand geometry, and find no use in it at all. These people are most likely the creative types who cannot be constrained rules and straightforward thinking. I fall more in the middle of these two. I find no use to geometry itself in my own life. However, I find that geometry (especially Euclid’s brand of geometry) can be a fantastic education in logic. The way Euclid follows such simple step by step procedures to create complicated propositions that make total sense is unbelievable. Euclid’s logic in creating geometry is why I study geometry.