

Re: ~ Proper sequence of mathematics to learn

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Your plan for learning "pure" math seems just fine. (It's not the same as the order the topics are usually covered in college classes, but it seems fine anyway). The reason I'm writing is to comment on your statement below that you don't like "applied" math: you should wait until you've seen some before you decide!

Applied math can be just as interesting as any other kind. And given that you evidently haven't studied calculus or linear algebra you really haven't seen any applied math yet, honest.

On Mon, 26 Jul 2004 14:14:23 GMT, "Adam" <addam@rogers.com> wrote:

>Hi,

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>I will be studying physics at university this September. I am trying to
>prepare myself for the material by learning pure mathematics, also just as a
>hobby. I really only need to know applied mathematics, but I do not like it
>much at all. I would like to know what most people would recommend that I
>learn in sequence. For instance, I have been studying set theory, and am now
>learning introductory group theory using online pdf documents. After group
>theory, I wish to use the knowledge to learn linear algebra. I am not sure
>if there is anything I should learn in between group theory and LA.

>

>Basically, my intention is to understand pure mathematics well-enough that I
>will be able to easily understand the mathematics that I will encounter when
>studying physics and so can focus on the actual ideas instead. I truly enjoy
>set theory, proofs, and am liking group theory so far, but I know that I
>will not have to do proofs in my upcoming physics courses. I wish to
>understand the mathematics fully and how it is related. That is why I
>learned logic and then worked on set theory.

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>I'd appreciate any additions or changes to the material/order of study if
>you are experienced with such things. As far as I can tell, the sequence of
>logic, set theory, group theory, and, finally, linear algebra, should be
>followed. However, there might be something that I have not thought
>included.

>

>*The math curriculum:*

- >1) *Set theory + proofs*
- >2) *Group theory*
- >3) *Linear Algebra*
- >4) *Single-variable calculus*
- >5) *Multi-variable calculus*
- >6) *Ordinary differential equations*
- >7) *Partial differential equations*
- >8) *Calculus with complex number*

>

>*The physics curriculum: – not sure of the order*

- >*Introductory physics*
- >*Classical mechanics – not sure if this includes general relativity. Maybe*
- >*just Newtonian mechanics.*
- >*Quantum mechanics*
- >*Quantum physics (molecules, solids, nuclei, particles)*
- >*Thermal physics*
- >*Electrodynamics*
- >*Atmospheric physics*
- >*Nuclear physics*
- >*Material physics – semiconductors*

>

- >*I also bought a used book on quantum fluids, but it seems way over any of*
- >*the other texts I have in terms of mathematics used.*

David C. Ullrich