September 17, 2022

Welcome to Math 9a, 2022-2023 academic year

Dear students and parents,

Welcome to the new academic year at SchoolNova. My name is Igor Zaliznyak and I will be the teacher of Math 9a class. Every year that I am teaching Mathematics at School Nova, sharing my affection for the beauty of mathematical classics with the new generation of students, I find it a rewarding and enjoyable experience. As every previous year, I will be trying my best to pass on the great gift of humanity's knowledge and appreciation for the artistic beauty of mathematical ideas that was given to me when I was at school. I am very excited to have all of you in the class, and I hope that our lessons will further your affection and enthusiasm for mathematics.

As pandemics is now under control, this year we will have an opportunity of in-person classes. This year our classes move to a new location on the SUNYSB University campus, and our Math 9 class will be held in the Humanities building. However, no matter what the location is, I believe that our class will be exciting and gratifying journey for you, as it was for the past School Nova students. When we return to classes, several new rules will be applied for the safety of the students and teachers.

- Wearing a mask and social distancing may be required if it would be mandated by the policy of the University and the New York State, and we must comply with it.
- Only when the previous lesson is over, and everyone has exited through the exit door the next class can enter.
- You must bring everything you need to class; sharing is discouraged.
- Parents are not allowed in class.

It is still possible that pandemics could force us to communicate remotely during some of our classes, although I hope such possibility will not realize. Nevertheless, I believe that our class will be the same exciting and gratifying journey as it was in the past, no matter in-person or remote.

We will continue using the Google classroom for submitting the homeworks and other class-related communications. The invitation to the google classroom was sent to you yesterday. Please accept the invitation to be able to upload your homework and get it checked. Check the Google class stream regularly for news and updates. To submit your homework, take the picture or scan the notebook, or prepare it in an electronic form, such as pdf, and upload it to the google classroom.

In our class, we will be following, in parallel, two subjects, which I call the old way – Algebra and Geometry. The subjects will be closely intertwined, so that ideas, concepts, and problems that we will learn in one will be used in the other. The split between subjects will fluctuate from one lesson to another, depending on the pace that we will have in each. We will begin with some basic review of mathematical logics and set theory in algebra and with the advanced theorems and problems in planimetry. We will then continue to the trigonometry in algebra, and sine/cosine theorems in geometry. Then – vectors, complex numbers, and more.

As you probably know, School Nova places strict requirements on attendance and homework assignments. Homework assignments in our class, however, will be structured less formally than in

the earlier grades. For each lesson, I will usually be providing a handout where the material is explained for your reference. I think that these handouts are useful, and I believe that it is very important that you review the classwork handout after each class. The homework assignment will usually have a range of problems, which will be offered to you. Although solving the entire problem set would probably be very difficult unless you are an absolute genius, it is extremely important that you try to solve as many problems as you can. Both classwork handouts and homework assignments will be posted on School Nova web page, https://schoolnova.org/nova/homeworks.

In addition to handouts there is a list of recommended literature, which I use in preparing this course. I recommend that you consider buying or renting these books (if you don't already have) – most of them are timeless mathematical classics, and you will never regret getting one.

Please come to class on time and well prepared, with notebook and pens/pencils for taking notes, and with the homework assignment prepared in a neat, orderly, and clearly understandable fashion.

Again, welcome to the new school year,

Sincerely,

Igor Zaliznyak.

Math 9 recommended literature, 2014-2022 academic years

1. R. Courant, H. Robbins. What is Mathematics? (Oxford University Press, 1996)
2. I. Stewart. Concepts of Modern Mathematics. (Dover, 1995).
3. G. E. Andrews. Number Theory. (Dover, 1994)
4. H. S. M. Coxeter, S. L. Greitzer. Geometry revisited. (The Mathematical Association of America, 1975)
5. Kiselev's Geometry. Book I. Planimetry (www.sumizdat.org, 2006)
6. I. M. Gelfand, M. Saul. Trigonometry (Birkhauser, 2001)
7. I. M. Gelfand, E. G. Glagoleva, A. A. Kirillov. The Method of Coordinates (Dover, 2002)
8. I. M. Gelfand, A. Shen. Algebra. (Birkhauser, 1993)
9. I. M. Gelfand, E. G. Glagoleva, E. E. Shnol. Functions and Graphs. (Dover, 2002)