

September 19, 2020

## Welcome to Math 9, 2020-2021 academic year

Dear students and parents,

Welcome to the new school year at SchoolNova. My name is Igor Zaliznyak and this is the seventh year that I will be teaching Math 9 at School Nova. Each time I find this teaching experience to be a new, exciting, and fascinating journey full of enjoyment by the beauty of mathematical classics. This year, our Math lessons will be different in form as the pandemic forces us to communicate remotely during our classes. Nevertheless, I hope that it will be the same exciting and gratifying journey as it was in the past. You will be learning new math, expanding your knowledge horizons and satisfying your curiosity. I will be doing 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 hope that our lessons will further your affection and enthusiasm for mathematics.

In our class, we will be following, in parallel, two subjects, which I call the old way – Algebra and Geometry. These subjects will be closely intertwined, so that the 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 an advanced problems and theorems 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, 2014-2021 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](http://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)