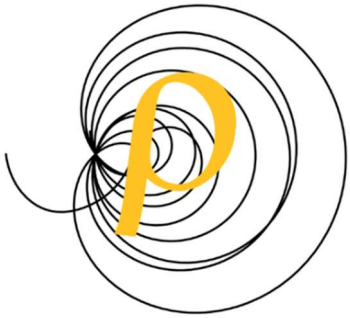

# The Prime Math Competition

## Competition Rules and Procedures in Detail

Hello and welcome to the Prime Math Competition (or PMC for short)! This is a competition that has been created exclusively with the students of ISD in mind by ISD high schoolers. The goal of this competition is to recognize students for their mathematical talents while also introducing them to new ways of thinking through challenging problems. In the process, we hope to hope to making mathematics feel fun and engaging while making participants better problem solvers for the future. The PMC is designed in a way such that no matter what math level you are currently at, there will certainly be a place for you. Overall, we hope that the competition experience is fun and rewarding and opens up a new viewpoint on mathematics for middle school students. With that in mind, let's talk about the competition format.

The PMC is split into different divisions based on current math enrollment to ensure equality between participants. There are 4 divisions as follows: Math 1 and Math 1/2, CC 7 and CC 7/8, CC 8 and Algebra 1, and Geometry and higher math levels. Each division of mathematical level focuses on problems that only require knowledge of topics of that math level and the ones before it (note, in the case of the Geometry and higher division, we will only create problems that require the use of skills up to Geometry). Make sure to sign up for the correct division when registering for the competition.

No matter which division you are a part of the competition format is the exact same. Each test contains 20 problems which you will be given a maximum of 40 minutes to complete. The PMC will be hosted during the school day in each of the participating schools. All problems must be solved without the use of a calculator and no problem is weighted more than the others. In other words, each problem is worth exactly one point if solved correctly and the maximum score on the competition is 20 points. Blank or incorrect answers will receive 0 points. All answers must be written as legibly as possible on the test booklet in the provided space for each question and no work must be shown in order to receive credit. The problems are arranged roughly in accordance with difficulty, with the easiest problems being at the beginning and the more rigorous ones at the end, but it may be possible that you find some hard problems at the start and some easy problems at the end. Further, answers must be given in their simplest form, otherwise they will be deemed to be incorrect.

The definition of "simplest form" for the PMC is as follows:

1. All fractions should be expressed as improper fractions unless specified. Ex. 1 ½ = 3/2.
2. All fractions should be simplified and expressed using the integer denominator possible with the least magnitude. Ex. 14/6 = 7/3.
3. All radicals must be simplified: Ex. $\sqrt{50} = 5\sqrt{2}$.
4. All denominators must be rationalized. Ex. $\frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$.
5. All answers that require the use of pi to express must be expressed in terms of pi instead of pi's decimal approximations. Ex. Instead of writing 3.14, write $\pi$.
6. Answers need not contain units to be considered correct. However, if units are given they must be correct. For this reason, we recommend that you do not provide units on your answers.
7. Any answers relating to dollar and cent amounts should be rounded to the nearest cent unless otherwise specified.

Please note that not all the above rules will apply to students from all divisions. Some of the above forms of answers may not be seen by students in lower divisions as they have not encountered some of these concepts before, and thus will not be tested on them.

Now that we have discussed some of the rules, let's move on to the fun part: the awards and prizes that you can win during the competition. Every student that participates in the competition will receive a certificate congratulating them for their excellent performance. The top 5 students in each division will receive an additional certificate to commend them for their podium finish. The top 3 students in each division for each school will receive extra awards. The third-place student will receive a bronze trophy and 1/6 a dozen donuts. The second-place student will receive a silver trophy and 1/3 dozen donuts. The first-place student will receive the gold trophy and ½ dozen donuts. Further, the top student in each division regardless of school will receive an additional overall Winners trophy. Although the awards are certainly great, we would like to remind you that the most important part of the competition is not fighting against others for first place but enjoying the problems and the experience of challenging yourself. In addition, if a student desires to know their relative placement with respect to other students who took the competition or they would like to learn overall statistics of the division they participated in, they may email us, the competition's creators.

Registering for the competition is quite simple. While the registration period is open, there will be 3 different ways in which you can sign up. Pick the one that is easiest for you! Either ask for a form from your math teacher, scan the QR code located on posters throughout your school, or go to the following website to get a link to a Microsoft form to fill out: https://primemathcompetition.org/. No matter how you register, the process should only take about 2 minutes. There are only 4 questions that we ask: Your first and last name, current math level (so that we can place you in the correct division), and your school email address (so that we can send you your results later).

We hope to see you there on competition day and good luck while participating!