

High School Talent Search Contest in Mathematics 2016-2017

Vermont State Mathematics Coalition

Dear Curriculum Coordinators, Teachers and Students,

In an effort to go green, minimize mailings and to make the test more accessible to students, the Talent Search Tests will not be mailed to schools but the tests will be posted on the Vermont Coalition website: <http://www.vtmathcoalition.org>.

The following are the dates for the tests this year:

Test Posted on Website	Results Due	Solutions Posted on Website
September 12	October 10	October 14
October 24	November 18	November 29
December 5	January 6	January 9
January 23	February 20	March 1

The Talent Search is an opportunity for students to challenge themselves mathematically outside of a classroom, and we encourage participation from any student who is interested in mathematics. Although the problems are designed to be challenging even to the best students, it has been our experience that the longer students participate, the more problems they can do on subsequent tests. Furthermore, we will note that last year, solving fewer than half of the problems would still have allowed a student to place in the top 10!

If these are not already sufficiently good reasons to participate, we also have a few other incentives:

- Each year from eight to twelve top ranked students are awarded gift certificates and other excellent prizes. These students are honored at a dinner to which they and their parents/guardians and a high school math teacher are invited.
- Students may be invited to attend, free of charge, the week-long Governor's Institute in Mathematical Sciences at the University of Vermont (<http://www.vtmathcoalition.org/summer-institute/>).
- The prize-winning students are also invited to be members of the 15 student team that represents Vermont at a national mathematics competition held each May on the campus of Penn State University.

The Talent Search Contest and the Awards Dinner are sponsored by the Vermont State Mathematics Coalition. The VSMC is also actively involved in organizing and staffing the Governor's Institute in Mathematical Sciences.

We are asking teachers to give students at your high school the opportunity to participate in the Talent Search Contest. This includes students of all grades who have an interest or aptitude for mathematics and are willing to tackle some challenging problems. We also try to reach all home-schooled students. Please keep this contest in mind for any home-schooled students that you may know.

RULES FOR THE TALENT SEARCH CONTEST

1. Students in all Vermont high schools (as well as middle schools and elementary schools) are eligible for participation in the Talent Search Contest. Each student who wishes to enter the Contest should submit solutions to as many of the problems as possible.

2. The work of each student is expected to be her/his own. Students should not consult with other students, teachers, parents or other individuals or internet sources about solutions to problems or for hints on solutions. A **student's signature** on the paper testifies that the rules have been followed.

3. For problems that require a numerical answer, you will be awarded full credit for a complete correct answer with adequately supported reasoning. Partial credit will be given for correct answers having insufficient justification, numerical approximations of exact answers, incorrect answers with substantially correct reasoning, incomplete solutions or proofs, or proofs with logical errors. For solutions relying on computer assistance, all such computations must be clearly indicated and justified as correct. The decisions of the graders are final.

4. Creativity, ingenuity, and clarity are encouraged.

5. Answers to problems should be in simplified form. Final answers such as $\frac{8}{4}$, 89^2 , $7-3$ and $2\cos 60^\circ$ would not be satisfactory. In cases when there is a question as to what is "most simplified", then alternate answers will be accepted, i.e., $\frac{7}{2}$, $3\frac{1}{2}$, and 3.5 are all acceptable.

Note to Teachers:

In several high schools, there are teachers who require that their students submit entries in the Talent Search Contest. If you expect your students to turn in an entry as a homework assignment, we are asking you, before the papers are mailed, to look at what your students have turned in to you. Please submit the papers of only students who have made a good faith effort to write or demonstrate their solution of any problem they have answered.