

High School Talent Search Contest in Mathematics 2011-2012

Vermont State Mathematics Coalition

Dear Curriculum Coordinators, Teachers and Students,

It is important to note that there are major changes this year in the talent search competition. In an effort to go green and to minimize mailings and hopefully 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> and follow the link to Talent Search.

The following are the dates for the tests this year:

Test Posted on Website	Results Due	Solutions Posted on Website
1. October 12, 2011	November 2, 2011	November 9, 2011
2. November, 16, 2011	December 7, 2011	December 14, 2011
3. February 1, 2012	February 29, 2012	March 7, 2012
4. March 14, 2012	April 4, 2012	April 11, 2012

Teachers are asked to encourage students to participate in the Talent Search Contest. Many of the problems of the Talent Search Tests are difficult, and even excellent students are not expected to solve all of the problems. It is our experience over several years of the Talent Search Contest that students who solve one or two problems on the first test can often solve four or more problems of subsequent tests

There are incentives to do well in the Talent Search Contest. 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. These students may be invited to attend, free of charge, a week-long summer institute at the University of Vermont. The summer institutes include sessions in mathematics, engineering, computer science and computer applications, and other sciences such as astronomy and life sciences. 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 summer institute held at the University of Vermont was created by the Vermont State Mathematics Coalition and was sponsored by the VSMC from 1993 through 2004. This Institute has now become one of the eight programs in the Governor's Institutes of Vermont. Now known as the "Governor's Institute in Mathematical Sciences", the program was first offered by that name in the summer of 2005. The Institute continues to be virtually the same as in the previous thirteen years with Sheila Weaver serving as director. The Vermont State Mathematics Coalition selects 16 students for the Institute. Their selection has been based on high achievement on the Talent Search Contest, the University of Vermont Prize Mathematics Exam, or the national AMC-10/12 tests. The Governor's Institute also selects 16 students for

the Institute. These students follow the selection process of the Governor's Institutes: Students wishing to be selected by this process for a Governor's Institute write an essay stating why they want to attend the program and obtain letters of recommendation as part of their application process.

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. We have attempted to reach students through the Chair of Mathematics or Contact Person at each high school. If our mailings should be sent to some other person, please let us 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. **A mathematical solution is expected with each problem attempted.** Half credit will be given for guesses, conjectures or incomplete solutions that result in a correct answer. Full credit will be awarded for a correct mathematical solution. The decisions of the graders are final.
4. Creativity, ingenuity, and clarity are encouraged. Special commendations will be given to students whose solutions exhibit these characteristics.
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/ demonstrate their solution of any problem they have answered.