

HiMCM: Procedures and Tips for a Great Experience

Introduction

The purpose of this article is to assist and guide students and advisors participating in *The High School Mathematical Contest in Modeling (HiMCM)*. In the article, COMAP provides information about the administration of the contest, as well as tips to ensure your contest experience is smooth, satisfying, and enjoyable. The article is broken up into three sections.

- **Before the Contest** – contest prep and registration.
- **Contest** – common mistakes made by teams and advisors during the contest.
- **After the Contest** – results and common post-contest questions.

Look for  which indicates an important contest tip.

Before the Contest

The High School Mathematical Contest in Modeling (HiMCM) is an international contest open to all high school and secondary level students. Individuals who have graduated, or moved on to an undergraduate level program, should consider our MCM/ICM contests.

The HiMCM is a true team competition. Each team may consist of one, two, three, or four (maximum allowed) students. Historically, the best teams have four members. All students on the team **MUST** be enrolled at the same institution at the start of the contest; COMAP will make no exceptions to this rule. After forming a team, the next step is choosing an advisor.

Any faculty or staff member at the students' institution can fulfill the role of advisor. The advisor will act as the main point of contact for the team, and will help ensure the team follows the contest rules and regulations. The advisor does not have to be from the mathematics department. An advisor can serve as the faculty/staff advisor to multiple teams. At no time can a student act as the team advisor.

We encourage advisors and students to prepare for the contest by viewing previous years' problems and solutions, as well as relevant contest articles, at www.mathmodels.org. The problems are free to view, and the solutions and articles are available to mathmodels.org members.



Contest Tip

Look at problems from previous years to understand the choices you will have when the contest begins. Understand the general differences between the problem choices, both in terms of the mathematics involved and the topics addressed.

Registration. Review contest information and register teams via the contest website (www.himcmcontest.com) prior to the contest start date. Advisors should carefully check the

order and spelling of team members' names during registration, as this listing will be used after the contest for participation and award certificates.

The registration fee is \$100 per team. We accept payment via all major credit cards, and payment must be made via our secure web site. We regret that we are not able to accept other forms of payment. After we confirm your payment, the advisor will be able to continue the registration process.

Be sure to print the page that displays your 2Checkout order number, as you will need this to continue the registration process. Additionally, this is your transaction receipt.

Example: 2Checkout.com Order Number 12345678



Contest Tip

Be sure to print or save a copy of your team's receipt with your 2Checkout order number. You will also receive a copy of your receipt via email using the email address provided during the payment process.

The Contest

Starting in 2018, the contest will be open during an 11-day window in which all teams will access the problems, work on selected problems, and upload solutions. Teams may work on the problems at any time during the 11-day window. This will give students, advisors, and parents more flexibility to schedule contest time around other required school, academic, and extracurricular activities. This change also relieves advisors, especially those with multiple teams, from finding and tracking a consecutive 11-day window for each team. The problems will not be more difficult than in the past, but the working period will be more flexible.

Students do not have to be physically together at school for the full 11-day window and are not required to use the full 11 days. During the 11 days, team members are free to break from the contest and each other. For example, students may break to attend classes, go home to sleep, go somewhere to eat, or go to school and family functions. The advisor must be present at the start of the contest to give the problems to the students/teams. The team advisor must also verify that the teams do not work past the 11-day time frame. After a team's contest period is over, the students and team advisor must sign the team control sheet stating that they did not work past the 11-day window or violate any of the contest rules.



Contest Tip

Students do not have to be physically together at school for the full 11-day window and are not required to use the full 11 days. As in previous years, the problems are designed for teams to complete a solution within 36 hours of work.

The contest problems will become available at 3PM EST on the starting day of the contest. When a team is ready to compete, the team advisor must [login](#) to view the problems. Once

logged in look for the ***VIEW THE PROBLEMS*** link which will become active at 3:01 pm EST on the starting day of the contest. Once the advisor logs in and views the problems, we recommend that he or she print out copies for student/team members.

<http://www.comap.com/highschool/contests/himcm/login.php>.

Problem Choice. The contest problem page will contain a link to the two HiMCM problem choices. Teams are free to choose either problem, but should submit a solution to only one problem. Any relevant data files or support materials will be included on the contest website.

The links below will become active at 3:01 p.m. EST Friday, Month Day

[CLICK HERE TO VIEW THE PROBLEMS \(PDF\)](#)

[CLICK HERE TO VIEW THE PROBLEMS \(PDF\) \(Mirror Site\)](#)



Contest Tip

Be sure to read the problem statements carefully before choosing your team's problem. Each problem will have different and specific requirements, such as required memos or letters, specific solution format, and/or page limits. You can work on both problems, but should submit a solution to only one of the problems.

Contest Assistance. During the HiMCM contest period, team members may **NOT** discuss any aspect of the problem with, nor seek help via any means or methods from, their advisor or any person other than the student members of their same team. Seeking assistance outside of the team violates the spirit and rules of the contest. Any attempts to get help from human sources – in person or via any medium – will result in disqualification. This includes attempts to seek assistance through interactive ‘help’ websites or social media. Posting or sharing any part or all of the problem statement, your team's solution process, partial results, or completed work in any form or medium during the contest period is strictly prohibited and will result in disqualification. COMAP continually monitors the Internet during the contest period for violations of contest rules.

Sources and References. Teams may use any inanimate source of data or materials: computers, software, references, websites, books, etc. **ALL SOURCES MUST BE CREDITED** using in-line documentation, footnotes, or endnotes, as well as a full bibliographic citation in the Reference section. Failure to credit a source for data or materials (pictures, graphics, charts, background information, ideas, etc.) will result in disqualification. During the contest you may find websites that appear to represent COMAP, asking you to purchase or pay for data and/or access to additional contest materials or information. These websites are **FAKE**. COMAP will never ask you to purchase any material related to the contest. If you find such a site, please report the site to himcm@comap.com.

Problem Notes and Updates can be found on the HiMCM problem page throughout the contest period. If you have a question that is not covered on the website you can send an email to himcm@comap.com. **Be sure to include the team number with your correspondence.**



Contest Tip

Be sure to check the website for any updates during the contest. COMAP will update the website with current contest information which may include problem specific updates.

Solution Submission. Papers including the Summary page must be in English, typed in a readable font of **at least 12-point type**, and must use either US Letter or A4 page size. The solution must consist entirely of written text and, as appropriate, figures, charts, or other written material only. Do **NOT** submit non-paper support materials such as computer files or software.

Each solution paper must display the team control number and the page number at the top of every page; for example, use the following page header on each page:

Team # 1234

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Contest Tip

Be sure to carefully check your team number as it is not uncommon to mistype or transpose a number.

The names of the student team members, advisor, or institution should **NOT** appear on any page of the electronic solution. The solution should **NOT** contain any identifying information other than the team control number.



Contest Tip

Do not include any type of team identification such as student names, institution name or geographical region. If you are required to include a letter with your submission, be sure not to sign the letter with your name. If you feel as though you need to have a formal closing to such a letter we suggest using: Sincerely, Team #1234.

Each team must submit an electronic copy of its solution paper (Adobe PDF file) by email to solutions@comap.com. Any team member or the advisor may submit this email.

- In the subject line of your email write: your team's control number. For example:
Subject: **1234**
- Use your team's control number as the name of your file attachments. For example:
1234.pdf



Contest Tip

Be sure to name your file carefully and check your team number, as it is not uncommon to mistype or transpose a number.

- COMAP will accept only an **Adobe PDF** file of your solution. DO NOT include your Control Sheet, Parental/Guardian Authorization forms, programs or software with your email as they will not be used in the judging process. Limit one team solution per email. Your team's summary should be included as the first page of your file and NOT in a separate second file. ***Note: The attachment must be less than 17MB!! Do not use a cloud service such as Google Docs. Your email must contain an Adobe PDF attachment.**



Contest Tip

EMAIL SOLUTION SUBMISSION: Be sure NOT to use a cloud service such as Google Docs. Your email must contain an Adobe PDF attachment. Email checklist:

- Email subject is correct (Team #_ _ _ _)
- Attachment (one file) is named correctly (Team #_ _ _ _) and attached to the email.
- The “to” address field is correct (solutions@comap.com).

Authenticity. By emailing a solution paper during the contest period, you are guaranteeing that the work is completely your own. COMAP investigates and takes all suspected instances of plagiarism seriously. HiMCM also uses comparison software to identify possible plagiarism within contest paper submissions. Plagiarism will result in disqualification.

Comparison Software. COMAP compares each submitted solution to all other solutions of the problem your team chose. The result of this comparison identifies solutions and/or parts of solutions that are exactly and/or similar to other papers. COMAP uses these results to verify the originality of your team’s solution.

Control Sheet/Authorization Form Submission: The Advisor and each team member must sign the Control Sheet to pledge that he or she abided by the contest rules and instructions. A signed [Parental/Guardian Authorization](#) form must be included for each participating student.

Send signed contest forms (Control Sheet/Parental/Guardian Authorization Forms) by email to COMAP: After the signed contest forms are prepared, email them to: forms@comap.com. In the subject line of your email write: your team's control number. For example: **1234**. COMAP will accept only an Adobe PDF or a Photo Image of your contest forms. Limit one set of forms per email. Teams may take pictures of the signed forms with a phone or digital camera and then email the images to forms@comap.com. ***Note: The attachment must be less than 17MB!! Do not use a cloud service such as Google Docs. Your email must contain Adobe PDFs or Photo attachments of the forms.**



Contest Tip

EMAIL CONTEST FORMS: Be sure not to use a cloud service such as Google Docs. Your email must contain physical Adobe PDFs or Photo attachments of the forms. Email checklist:

- [] Email subject is correct (Team #_ _ _ _)
- [] Attachments are named correctly (Team #_ _ _ _) and attached to the email
- [] The “To” address field is correct (forms@comap.com).

After the Contest

One to two days after the contest has closed (last day of contest), we recommend that you login to the contest web site using the **Advisor Login** link to verify that your team’s Electronic Solution was received at COMAP.

[*Click here to verify if you email submission has been received*](#)
[This link is now active. Updated 00/00/000 0:00PM](#)



Contest Tip

Electronic Solutions status will be updated after the contest deadline has passed. In most cases COMAP will have solution status posted 24-48 hours after the contest is over.

If after 48 hours your team solution is not listed in the list of received solutions, we did not receive an email submission from your team. If this occurs, contact us as soon as possible via email with your team number.

Judging. Contest judging will be completed in January and the results will be posted on or before February 1st each year. COMAP will recognize successful Solution Papers in the categories of Outstanding, Finalist, Meritorious, Honorable Mention, and Successful Participant. Paper that do not adequately address the problem or violate contest rules will be designated as Unsuccessful Participant or Disqualified respectively.

Disqualified - The team's submission was in violation of the contest rules.

Unsuccessful Participant - The team's submission did not adequately respond to the requirements of the contest problem.

Successful Participant - The team’s submission responded to the requirements of the contest problem and communicated those results to the judges.

Honorable Mention - The team's submission contained elements that demonstrate above average processes and concepts in modeling and problem solving.

Meritorious - The team's submission was excellent in many aspects of modeling, problem solving, and communication and showed elements that are exemplary for the scope of the contest.

Finalist – The designation Finalist recognizes those team reports that were among the best, reached the final round of judging, and were in final discussions for the Outstanding designation.

Outstanding – A small number of team submissions judged as the “best of the best” receive the Outstanding designation. These team submissions are at the highest level in terms of modeling,

solving the contest problem, and communicating the solution. COMAP may publish and use all or part of these submissions as examples of outstanding student work.

COMAP will not rejudge any contest papers. All contest papers go through a rigorous judging process and COMAP stands behind the designations awarded to papers. We recommend that you review the outstanding papers and read the judges commentary after the contest for insights into the quality of the content and presentation of the best papers.



Contest Tip

Papers cannot be rejudged for any reason.

Once the results are made public on the website, PDF certificates will be available for download. The spelling and order of the student names on the certificate is input by your team advisor during registration and COMAP does not change or edit this information.



Contest Tip

The order of the student names has no bearing or importance on participation. In the eyes of COMAP and the contest director all team members are equal. Advisors should ensure they spell team members' names correctly when registering.

If you find that there is an error with your certificate, email COMAP with your team number, the error and the correction. We will only correct spelling errors and typos. We will not change any other information.