



ARML Local 2021 On-Line Proctor's Manual

Introduction

Unlike previous years, we will be holding ARML Local in two different ways:

- (1) on-site, where a coordinator will be responsible for printing copies of the contest for each team and assigning a proctor to each team to help them through the rounds and then submit answers via Google Forms, and
- (2) on-line, where proctors will be responsible for observing their teams via Google Meet or the online collaboration environment of their choice and will be responsible for submitting answers during the team and relay rounds. The online collaboration environment must allow for proctors to see and hear all students during all rounds of the contest. In general, we assume that a single proctor is managing each team on-line, but there are special considerations when either a student does not have a webcam on their laptop or two or more students are sharing a common computer (in which case there must be an additional proctor physically present with those students).

Unlike 2020, there will not be centralized timing and password distribution via a live feed. Accordingly, the contest may be taken at any time over the weekend of April 24th and 25th. Proctors will be responsible during the contest for timekeeping and either distributing papers or providing passwords to students to unlock the encrypted PDFs that contain the problems.

General Notes

- Proctors should not clarify materials on the exam sheets. It is assumed that students have reviewed the sheets provided by ARML regarding notation, etc. prior to the contest. If there is a serious misunderstanding on a problem, students should notify their proctor, who will contact the ARML Local Head Coordinator.
- Calculators may not be used on any round for ARML Local. Computers may be used only for the purposes of communication between teammates and with the proctor, to view contest problems, and to submit answers at the conclusion of the individual rounds and during the tiebreaker. No other technology (including, but not limited to) cell phones and tablets may be used or visible during the round. Cameras must be positioned such that students are clearly seen to be away from the keyboard while taking the contest, and students may not mute their mics during the round. While scrolling through contest problems will be necessary, no other typing is allowed during rounds.
- Proctors should make the announcements **in bold text in quotes** to their teams verbatim, apart from the PDF file passwords which will be provided separately (but are denoted here as **XXX**).
- It is assumed that prior to the start of the contest, the proctor or coach has distributed to all students the links to both the problems and answer forms specific to their relay position. **To minimize confusion, do not release all links to all students.** Students are encouraged to download the encrypted PDFs that contain the problems prior to the contest.
- Proctors must fill out the day-of registration form [here](#) prior to beginning the contest.

Special instructions for teams with students sharing a computer are given in blue.

Team Round (45 minutes)

1. **“Before we begin, a rules reminder. Computers may be used only for the purposes of communication between teammates and with the proctor, to view contest problems, and to submit answers at the conclusion of the individual rounds and during the tiebreaker. No other technology (including, but not limited to) cell phones and tablets may be used or visible during the round unless they are being used as the camera and microphone to connect to the team’s meeting room online. Cameras must be positioned such that students are clearly seen to be away from the keyboard while taking the contest, and students may not mute their mics during the round. While scrolling through contest problems will be necessary, no other typing is allowed during rounds. Students should open the file containing the Team Round problems and await the password, which will be coming at the end of these instructions. The Team Round consists of 15 problems and teams will have 45 minutes to solve the problems. At the end of the round one team member will relay their answers to their proctor who will submit the answers online. Students should be extra careful to submit the answers in the form requested by the problem. I will give teams a 3-minute warning and a 1-minute warning. The password to unlock the Team Round is XXX.” (Repeat password twice, once as letters, once as their NATO alphabet equivalents.) “Begin.”**
2. Begin the timer for the Team Round. When appropriate, give the team a three-minute warning and a one-minute warning.
3. When 45 minutes have expired, give a “pencils down” order.
4. Open the ARML Local Team Round Proctor Answer Sheet Google Form. Enter your name, e-mail address, and team number. Then one at a time, enter the answers to each problem as provided by the student. Students may either speak their answers or convey them via chat. At the end of receiving all 15 answers, repeat them back to the team for confirmation and click submit.
5. After the round students should fill in their Team Round answers on their paper backup to resolve any protests regarding incorrect submissions of answers online.

No special instructions for students sharing the same computer for the Team Round.

Collaborative Relay Round (4, 5, and 6 minutes)

1. Prior to the contest start, each team member should have been assigned a relay position, A1, A2, A3, B1, B2, or B3 corresponding to their student ID.
2. The proctor will read the rules for collaborative relay rounds to the team.

Instructions for Collaborative Relay Round

- For the first relay round, each team has been broken down into squads of 2. Each squad receives a different set of two problems that each squad can work on collaboratively. Squads may not share or discuss problems with other squads, but may announce answers and/or discuss problems with their squad mates.
 - The answer to the first problem will be used to solve the second problem (the number is referred to as "*the number you will receive*"). For the second relay round, teams will be broken into two squads of 3 to work on different sets of three problems, and for the final relay round, the team will compete together on a single relay of six problems.
 - The relay squads are determined by a student's student ID. A1+B1, A2+B2, and A3+B3 form the three relay squads in the first relay round, and A1+A2+A3 and B1+B2+B3 form the two relay squads in the second relay round. Students may not deviate from these assignments. If a team has fewer than six students, it may assign students to cover some or all sets of relay problems.
 - Unlike previous ARML relays, there is only one time for answer submission at the end of each round (at 4, 5, and 6 minutes, respectively).
 - Unlike previous ARML relays, all relay problems are worth points for a correct answer. In Round 1, all correct answers are worth one point. In Round 2, correct answers to the first and second problem of each squad are worth one point, while correct answers to the third problem of each squad are worth two points. In Round 3, problems 1 through 3 are worth one point, problems 4 and 5 are worth two points, and problem 6 is worth three points. Therefore, up to 24 points are available in the collaborative relay round.
3. "Students should open the file containing the Relay 1 problems and await the password, which will be coming at the end of these instructions. "Squads may not share or discuss their problems with other squads. You will have 4 minutes to answer the problems. I will submit the answers for all relay squads after the round is completed, and each squad should nominate one member to provide answers for the squad. I will give a 30-second warning and a 10-second warning. The password to unlock Relay 1 is XXX." (Repeat password twice, once as letters, once as their NATO alphabet equivalents.) "Begin."

If there are students who are sharing the same computer, there may be a round where students sharing a computer are on different relay squads. In that case, the in-person proctor should print the relay rounds out prior to the contest and distribute them to their students as needed.

4. Begin the timer for the Collaborative Relay Round. When appropriate, give the team a 30-second warning and 10-second warning.
5. When 4 minutes have expired, give a "pencils down" order. Open the ARML Local 2-Person Relay Proctor Answer Sheet Google Form. Enter your name, e-mail address, and team number. Then one at a time, enter the answers to each problem. At the end of receiving all 6 answers, repeat them back to the team for confirmation and then click submit.
6. After the round students should fill in their Collaborative Relay Round answers on their paper backup to resolve any protests regarding incorrect submissions of answers online.
7. Steps 3-6 should be repeated for the second and third collaborative relay rounds (which last 5 and 6 minutes, respectively).

Individual problems (5 pairs of problems, 10 mins/pair)

1. “At this point students should no longer discuss problems with other teammates during the Individual Round. You will have 10 minutes to answer each pair of problems. When time has expired and pencils are down you may submit answers via the Google Answer form but not prior. I will give a 5-minute warning, a 1-minute warning and a 10-second warning.”
2. “Students should open the file containing Individual problems 1 and 2 and await the password, which will be coming at the end of these instructions. Students should also open the answer sheet for Individual problems 1 and 2 and fill out their name and student ID.” Await confirmation that this has taken place. “The password to unlock Individual problems 1 and 2 is XXX.” (Repeat password twice, once as letters, once as their NATO alphabet equivalents.) “Begin.”
3. Begin the timer for the Individual Round. When appropriate, give the team a 5-minute warning, a 1-minute warning, and a 10-second warning.
4. When 10 minutes have expired, give a “pencils down” order. Each student may enter their answers into the Google Form and hit submit.

If there are students sharing the same computer, the in-person proctor should submit answers for each student immediately after the round expires.

5. After the round students should fill in their Individual Round answers on their paper backup to resolve any protests regarding incorrect submissions of answers online.
6. Steps 2-5 should be repeated for each pair of individual round problems.
7. After the end of all five pairs of individual round problems, proctors should announce the correct answers to the individual round problems so that students can determine their individual round scores.

Tiebreaker problem (10 minutes)

1. The tiebreaker problem is used to determine the top individual for ARML Local and has no impact on the team results. All students may take the tiebreaker if they wish, although only the top scoring students on the team may be eligible for top individual honors.
2. Open the Online Proctors Tiebreaker answer sheet online (which is the same form as the students use to submit their answers), enter the following information up top:

Student Name: PROCTOR (not the proctor's name, literally, the word PROCTOR)

Student ID: <team number>A1

And scroll to the bottom. DO NOT click submit yet.

3. **"The tiebreaker is used to determine the top individuals for ARML Local and has no impact on the team results. The student with the highest individual score and the fastest correct tiebreaker answer will be the top individual for ARML Local. Students should open the file containing the tiebreaker problem and await the password, which will be coming at the end of these instructions. Students should also open the answer sheet for the tiebreaker and fill out their name and student ID."** Await confirmation that this has taken place. **"You will have up to 10 minutes to submit an answer. Only the first answer submitted prior to time expiring will be considered for credit. I will give a 5-minute warning, a 1-minute warning and a 10-second warning. When you have submitted your answer, also write it clearly on the backup answer sheet. The password to unlock the tiebreaker problem is XXX."** (Repeat password twice, once as letters, once as their NATO alphabet equivalents.) **"Begin."**
4. As soon as you say "Begin.", click submit on the answer sheet. This marks when the Tiebreaker Round begins for your team.

If proctoring multiple students in person: Fill out the name and id of each student on answer sheets for each student on separate tabs on your browser prior to the round starting. When they have an answer ready, immediately enter it into the sheet and submit.

"The contest is now complete. We ask all participants to not discuss the problems outside your team until Monday. Students should also either scan or photograph your backup answer sheet and email it to your proctor or head coach."

Some Notes Regarding Answer Entry

- To simplify grading, please instruct students submit all answers using the following formats:
 - If the answer is an integer, enter it as-is.
 - If the answer is rational but not an integer, enter it as A/B , where A and B are integers and $B > 0$.
 - Do NOT submit decimal or mixed fraction equivalents of rational numbers. They will not be counted wrong, but it will delay grading.
 - If the answer includes a rational multiple of a square root, enter it as $A \sqrt{B}/C$, where A , B , and C are integers, $C > 0$. If A or $C = 1$ it may be omitted (such as $\sqrt{7}$, $\sqrt{3}/2$, or $4 \sqrt{5}$).
 - Answers with multiple square roots or terms may be put over a common (integer) denominator, but are not required, so $(3 + 2 \sqrt{3})/3$ and $1 + 2 \sqrt{3} / 3$ are equivalent and acceptable.
- Retain answer sheets for each team until told otherwise by the Head Coordinator. The answer sheets for high scoring teams and individuals may need to be sent (scanned and emailed, faxed, or mailed) to the Head Coordinator to confirm prize eligibility and finalize top scorer results. **Please do not send copies of answer sheets unless asked to do so.**

What should you do if you suspect wrongdoing?

Let's talk about obvious cases of wrongdoing. These include, but are by no means limited to: calling out answers during the individual or tiebreaker round, sharing relay problems between squads (note that discussion may take place in the room, but students should not contribute to discussion on other squads' problems), or using other communication devices during the contest. Students should not be typing during rounds, with the exception of scrolling to view problems; longer time spent typing may suggest that they are using the computer for reasons other than those allowed during the contest. Generally, if the instructions read by the proctor say to not do something, and the student does that something, they're doing something wrong. In all cases, we ask that proctors first provide a warning, then a report on any additional occurrence to the ARML Local Head Coordinator specifying the team name, student name/email, proctor name/email and an explanation of the situation. Do not submit a report on a first offense. Mistakes happen, and taking this contest online produces new challenges for everyone. It is not the proctor's responsibility to enforce disciplinary actions during the contest, rather to observe and report. ARML will decide on what actions to take in response to any reports after the contest.

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Thank you for your help!