

American Regions Math League Power Contest

Dear Coach:

Welcome to **Round 1** of the **2016 – 2017 ARML Power Contest**. Each year the contest seems to grow in popularity, and we add more teams. I am excited by the opportunity to add a number of teams from China this year—and I hope I can keep the contests fresh and fun for the students so that they will want to come back for future years!

As always, at the ARML competition in June we will be awarding plaques to the top teams, through the generous sponsorship of the Society of Actuaries. But we know that your students are in it for the fun and challenge of solving interesting problems, so let's get to it!

This page should be the first in a five-page document consisting of the items below:

1. This letter.
2. Rules and Directions page.
3. Grading sheet.
4. Answer sheet.
5. Comment sheet.

The contest itself should arrive in two more file attachments to the same e-mail to which this was attached, or two more files downloaded from the ARML Power contest site.

Since it was such a popular idea last year there is a short document (the “reading” document) that students may study and discuss for up to ten minutes before they are given the actual problems. This document establishes the format of the answers students are to give, which is important to understand before the students start on their own solutions.

In advance of administering the contest please make enough copies of both the contest questions and the reading for your students, as well as a supply of answer sheets for them to use (about 20). The contest should be given between **October 29 through November 13**. Some teams have already contacted me regarding being a little early or late; if you need to make special arrangements please let me know as soon as possible.

At the conclusion of the contest, staple together the team solutions. **Please validate the grading sheet with your signature.** Return the grading sheet, comment sheet, and student solutions to me as quickly as possible—I intend to do the bulk of the grading over the Thanksgiving holiday.

The solutions to Round 1 will be sent at the conclusion of the contest window, and also posted to the ARML Power web site. Graded papers will be returned via regular mail when grading is complete.

If you have not yet paid the registration fee, you may include check or money order for \$50 payable to ARML Power Contest along with your solutions. I will grade papers from unpaid teams, but scores will not be posted for those papers.

Warmest regards,
Micah Fogel

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2016 – 2017 ARML Power Contest

Round 1

Rules and Directions

To be read to the students prior to the start of the contest:

This is the first round of the 2016 – 2017 ARML Power Contest and should take place between Saturday, October 29 and Sunday, November 13.

You will have **45 minutes** to complete this set of problems. During this time you are encouraged to work together, communicating and sharing ideas. It is important that everyone understands the problem before splitting up into smaller groups.

In addition, to make sure you are familiar with the ideas of the contest and the proper format for answers, there is a short handout to read. You will have up to **10 minutes** to read and discuss this handout before you receive the actual contest problems. This 10 minutes does not count toward the 45 minutes you have to complete the contest.

Language translators may be used on this contest, but no other electronic devices are allowed. This includes, but is not limited to, calculators, computers, tablets, and smartphones.

The topic of the first contest this year is alphametic puzzles. These are puzzles where the digits in an arithmetic problem have been replaced by letters, and the puzzle is to return the digits to their proper place in the original computation. The reading you will do ahead of time will give you the expected format for your answers. Please become comfortable with it before trying the actual contest problems.

Please pay attention to the directions in each contest question, as that may save you quite a bit of writing! For many problems, you only need to give your final solution to the problem. Other problems will ask you to write explanations or proofs. Be clear and concise.

Use dark pencil or ink and **please be legible**. Write on **only one side** of an answer sheet. You may submit several answers on the same answer sheet, but be sure to submit only one solution for each problem!

At the conclusion of the contest, submit your solutions **in order** to your coach. You are encouraged to include any comments or concerns about the problem on the comment sheet. The contest has a total of 40 points possible. You will be given a copy of the scoring sheet; the point value of each problem is also listed in the left margin on the contest sheets.

Contests will be mailed in, and scores will be posted as soon as possible. The solutions will also be posted. The ARML Power Contest website is: www.arm1power.com.

Good luck!!

Enjoy!!

2016 – 2017 ARML Power Contest
Round 1
Grading Sheet

Team Name: _____

(The number appearing in braces is the point total for that problem or part.)

1a. ____ [1]

6. ____ [3]

1b. ____ [1]

7. ____ [3]

1c. ____ [2]

8. ____ [3]

2. ____ [2]

9. ____ [3]

3. ____ [4]

10. ____ [3]

4. ____ [3]

11. ____ [4]

5. ____ [3]

12. ____ [5]

Total Score: _____ (out of 40)

We have complied by the rules of this contest

(coach's signature)

(date)

2016 – 2017 ARML Power Contest
Round 1
Answer Sheet

Page ____ of ____ . Problems(s) _____

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Comment Sheet