



MESA DAY RULES 2019-2020 (FINAL)

Math Escape Challenge

LEVEL:	High School
DIVISION(S):	Grades 9 th -12 th combined
COMPOSITION OF TEAM:	2-3 Students per team
NUMBER OF TEAMS:	Preliminary – Determined by your local Center Regional – One team per division per Center
SPONSOR:	Cal State LA MESA College Prep San Diego State University MESA College Prep

OVERVIEW: Students will work in teams of two to three to solve challenging performance and/or problem-based real-world problems using general mathematics skills and techniques. Through collaboration, teams will solve a series of non-routine problems requiring creative deductive and reasoning skills to “escape” the quickest. **Participation logistics, limits, and competition facilities may vary by host site. Advisors and students are responsible for verifying this information with their center director.**

MATERIALS: The Host Center will provide the following:

- Answer Sheet distributed in a 9” X 12” Clasp Envelope
- A series of questions will be given to each team
- Pencils
- Any materials/tools if required by the challenge.

Each team can bring the following:

- Calculators (acceptable calculators described in General Rule #11)
- Testing Divider that covers the following:
 - No markings of any kind beyond student/advisor name and school.
 - Dimensions of no more than 60 cm above the desk line and no more than one (1) meter of accessible tablespace. (Reminder: Limits on competition facilities vary by host site. Contact your MESA center.)
 - Recommendation: Students can create a divider with manila folders.

GENERAL RULES:

- 1) Teams must consist of 2-3 students. Teams consisting of 1 student will not be allowed to compete.
- 2) There is no restriction on the composition of a team. Teams may consist of students from any grade or math level.
- 3) Each team members’ name, school name, and MESA Center must be completely filled out on the answer sheet. If any of the above items are incomplete, the team will be disqualified.

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- 4) Teams will be allowed 2 hours to solve the challenge and “escape”.
- 5) A problem group may be one question or a series of connected and dependent questions.
- 6) Each question or question group must be answered before moving on to the next question group.
- 7) Only answers submitted in the designated format or location will be assessed. This can vary from answer sheets, the use of locks, notifying proctors (etc.). Each problem group will include note on how to submit answers.
- 8) The problem groups will vary from applied logic riddles, graphing, or questions from math-related fields.
- 9) Scratch paper is not allowed. Each problem group is printed on a separate sheet of paper; teams may use both sides of this sheet to solve the problem. Any work done on this sheet will NOT be used for scoring purposes.
- 10) Books, mathematical tables, or other resource materials may not be used.
- 11) Scientific calculators may be used. Graphing calculators are not allowed. Only non-QWERTY calculators are permissible and must be supplied by the team. Calculators that have typewriter-like keyboards, require an electrical outlet, make noises, or use paper are not permitted. Additionally, devices with embedded calculator functions or any electronic signaling devices such as cell phones, iPod/iPad, laptops, smart watches or tablet computers are strictly prohibited.

JUDGING:

- 1) Lead contest judge will assemble all participants and review the event guidelines and judging criteria, verify only permissible calculators are present, and distribute pencils and answer sheets.
- 2) Per General Rule # 3, each team will legibly write each team members’ name, school name, and MESA Center on the answer sheet.
- 3) Each team will receive Problem Group #1 in a sealed envelope. Teams must not open the envelope until instructed to do so.
- 4) Proctors will be placed around the contest room to check answers and facilitate the challenge.
- 5) Once the lead judge has signaled the beginning of the contest, teams may open and begin solving the first question group.
- 6) Once the team has solved the first problem group, one member of the team will notify the proctor by raising their hand. The proctor will check the teams answer sheet and upon verifying the correct answer, will give the team the next problem group. If the team's answer is incorrect, the proctor will indicate so and the team may continue to work on the problem group until they reach the correct answer. This will continue until the team reaches and solves the last problem group. Note: Teams informed of an incorrect answer cannot submit a new/updated answer for at least 30 seconds.
- 7) Tie Breaker: Proctors will record the time to answer the question group correctly and note it on the answer sheet. The team that completed the question(s) the fastest will be the winner.

SCORING:

- 1) Winning teams will be determined by the following:
 - a. “Escaped” in the fastest time.
 - b. If no teams “escape”, winners will be determined by the highest number of problem groups completed in the allotted time.

AWARDS:

- Medals will be awarded for 1st, 2nd, and 3rd place.
- Only the 1st place team will advance to Regional/State MESA Day.

ATTACHMENTS:

- Math Concepts Resource

MATH CONCEPTS RESOURCE

The following map concepts can be used in any variation in the challenges:

- Geometric shapes
- Two- and three-dimensional figures
- Surface area and circumference
- Statistics/Probability
- Rational and irrational numbers
- Equations and inequalities
- Fractions and percentages
- Algebraic equations and systems
- Polynomials
- Exponents
- Geometric functions
- Graphical mapping/equations/functions

The resource folder can be found by clicking below:

- <https://bit.ly/2WBNKZj>
- Resources include demo challenges and sample problems.