

# UNC MATH CONTEST 2022

## COMPETITION RULES

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# COMPETITION STRUCTURE

The UNC Math Contest consists of three rounds: the Individual Round, Power Round, and Blitz Round. No calculators will be allowed in any part of the competition. Pencils, rulers, compasses, blank paper, and blank graph paper are allowed at the competition. Please bring your own supplies, as our supplies will be limited.

## TEAM CREATION

Every UNC Math Contest Team will consist of 4 members. They may be from different schools. Furthermore, each school may send multiple teams. Note that there is a 20-team capacity, so register as soon as possible to reserve a spot.

# RULES

Violation of any of these rules may result in disqualification from the competition.

1. No electronic devices are allowed for use during any of the rounds.
2. No communication between teams during the rounds will be permitted
3. No external aids (notes) may be brought.
4. No slandering or "trash talking".
5. Treat event staff with proper respect.
6. No collaboration is allowed between team members or other competitors during the individual round.

## INDIVIDUAL ROUND

Each participant will work alone on a 7 question exam for 60 minutes. Each question will have a (not-necessarily positive) integer answer. Each question will be worth 1 point.

The difficulty of the problems will range from mid AMC to mid AIME difficulty.

## TIEBREAKER ROUND

The top students with the same score on the individual round will participate in the Tiebreaker Round if the resolution of their tie could affect the top 3 placings.

Prior to the Awards Ceremony, the students who are called will be shown a problem, and given 5 minutes to solve it. The students may submit an answer only once and will be ranked according to the time when they submit a correct answer.

If all ties are not broken within 5 minutes, the next problem will be shown. If still tied, reserve problems will be utilized that are significantly easier in difficulty to break the tie.

# POWER ROUND

The Power Round is a multi-part proof problem on a unique topic. Team members will collaborate to write short responses to each part of the problem. Teams will have 60 minutes to write their responses. Partial credit will be given for incomplete proofs. The Power Round will be scored out of 50 points.

Guidelines for responses:

- The response to each section should be written on a separate piece of paper
  - ◆ If a solution consists of multiple pages, write "Page 1 of X" for page 1 and so on (where X is the total number of pages)
- The problem number and team name should be written on the upper left corner
- Prior to handing in your responses to the proctor, make sure the pages are sorted in the proper order

# BLITZ ROUND

The Blitz Round is a 60-minute, 20 problem round, where participants can collaborate with team members. Initially, the following grid of tiles will be displayed to competitors:

1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5

The number on each tile represents the point value of the corresponding problem. Upon the start of the round, teams can select a tile. The problem corresponding to the tile will be revealed. Teams can work on this problem for as long as they want, but cannot choose another tile until they have submitted an answer to the current problem at hand. Each problem has a (not-necessarily positive) integer answer.

If a problem is solved correctly, the number of points as indicated by the tile is awarded. If solved incorrectly, 0 points are awarded. The maximum score that can be achieved on the Blitz Round is 60 points.

# SCORING

**Individual Round:** Each team member will have an individual score out of 7 points. The **Combined Individual Score (CIS)** is the sum of each team member's individual score, for a max score of 28.

**Power Round:** The **Power Round Score (PRS)** is the team's Power Round score out of 50 points.

**Blitz Round:** The **Blitz Round Score (BRS)** is the team's Blitz Round score out of 60 points.

The **Team Overall Score (TOS)** (for a max of 720 points) is computed as follows:

$10 * \text{CIS (max 280 points)} + 6 * \text{PRS (max 300 points)} + 4 * \text{BRS (max 240 points)}$

Teams will be ranked by their **TOS** score. In addition, top individuals will be recognized and also given awards.