

## **Rules for the Mental Calculation League (Updated April 2024)**

A. Overview: The Mental Calculation League (the “League”) was established by the Global Mental Calculators Association (the “Association”) for the purpose of providing a regular forum for the top calculators to compete in while increasing communication and contact within the mental calculation community and compiling calculation statistics for competitors in the League. The concept of the league is derived from the league created and maintained by memory competitors.

B. Eligibility: Each season of the League is limited to a fixed number of competitors. Prior to each season, there will be a minimum six-week application period for the next season. Prospective competitors must apply through the application section of the Association website. Applicants may either: (1) rely on previous Mental Calculation World Cup (“MCWC”) performances; (2) rely on prior League competition history; or (3) perform a supervised tryout. In evaluating prior MCWC performances, an adjustment index, based on the scores in the most recent MCWC, will be implemented to reflect the increasingly competitive nature of the MCWC. One-third of the League positions will be reserved for qualifiers relying on MCWC results or League competition history. Applicants who elect to engage in a tryout will be given fifteen minutes to complete a variety of sample questions that are reflective of the questions to be administered during the League

Any competitor who elects to rely on previous competition performances, but does not qualify will be promptly notified and given the option of engaging in a tryout. The Association is tasked with determining the qualified competitors.

C. General League Format: The League will include weekly matchups between competitors. All matchups will be conducted online. Competitors will be required to use a video call application. The competitor must share video of their screen and video of the competitor during the competition; recording of the match-up may occur (see ¶ H for more information).

D. Head-to-Head Matchup: The tasks for League matchups will be devised by the association in consultation with members of the calculation community. The list of questions formats can be determined through practicing with the League simulator or competition app. Any competitor may object to a specific question format by lodging an objection with the Association that explains the grounds for the objection; the Association will vote to determine whether to remove any questions to which an objection was received. The question bank for competition will be sufficiently large that only a small percentage of posted tasks will be used during any given match up.

There will be a thirty (30) second time limit for each question. Competitors will answer the question by typing the answer in an answer box. Each correct answer, regardless of question type, earns the competitor one point. The competitor will move on the next question upon the earlier of: (a) submission of a correct answer; or (b) expiration of the 30 second time period.

A match concludes upon the earlier of: (1) expiration of 20 minutes; or (2) one competitor holding a 30-point lead after a minimum of 10 minutes. Upon conclusion of the match, final results will be displayed on the screen.

League scoring relies upon a point system with each match being worth 60 points. The winning competitor receives 30 points plus the margin of victory. If the margin of victory is less than 30 points, the other competitor receives 30 points minus the margin of defeat.

Many question formats include non-integer answers. The required accuracy for non-integer answers depends upon the absolute value of the integer component of the answer and are posted in the instructions for the league simulator. For answers with an absolute value above 10, the required accuracy is less than .5. For answers with an absolute value between 1 and 10, the required accuracy is less than .05. For answers with an absolute value of less than 1, the required accuracy is less than .005.

E. Season Structure and Playoffs: Each season will consist of a fixed number of head-to-head match ups. At the conclusion of the season, the top half of competitors, determined by win-loss record, will qualify for the playoffs. Any ties that affect who will qualify for the playoffs will be resolved through a play-in match-up. Any ties that merely affect seeding will be resolved by using the overall speed score as the tiebreaker.

The playoffs will follow a standard bracket format with an appropriate number of byes and no reseeding between rounds. The playoffs will follow a similar format as regular-season match-ups with the following changes:

- (a) the question difficulty will be increased;
- (b) the minimum time limit will be 15 minutes during playoff matches and 20 minutes during the finals match;
- (c) the “maximum time limit” will increase to 30 minutes during playoff matches and 40 minutes during the finals;
- (d) all playoff matches will have a win by 10 rule. If the margin is less than 10 when the maximum time limit is reached, the match will continue indefinitely until one competitor obtains a 10-point lead.

F. Generation of Surprise Tasks: There are three fundamental rules governing surprise tasks: (1) all questions must be capable of being displayed and answered without knowledge of English language; (2) all questions must be capable of being solved through the use of the four basic arithmetic operations; and (3) no advanced memorization of information must be required to be reasonably competitive in the task.

G. Generation of Match-Ups: At the beginning of each season, the Association will generate weekly match-ups through a random generator. The match-ups will then be provided to the league competitors. Competitors will have a fixed period of time to schedule the fixed number of matchups. Subject to competitor availability, there will be one match-up per week and competitors should endeavor to follow the match-up order provided by GMCA. When necessary, however, the match-up order may be modified and a competitor may engage in multiple matchups in a single week.

H. Recording of Matches: All playoff matches and regular season matches for which an official is presented may be recorded by GMCA for the purpose of analyzing statistics. GMCA also may use video recordings for the purpose of promoting or advertising the calculation league. GMCA will not make any recording public without the authorization of the competitors.

GMCA may request that for regular season matches for which an official is not present, the competitors record their screen and their person and submit the recordings to GMCA for verification of the match results.

I. Technological Requirements: During the qualification rounds and officiated matches, competitors will be required to join a video call. The preferred video call platform is Google Meet, but if any competitor is unable to access Google Meet, an alternative video call platform may be designated.

Competitors are responsible for having a sufficiently stable internet connection during the matches. The league platform is designed to allow users to reconnect to the room and resume the match if a disconnection occurs. GMCA cannot, however, guarantee the reliability of that capability in cases of significant internet disruptions.

Competitors may elect to compete in the calculation league using a mobile device, but it is not recommended by GMCA as, depending upon the specific device, there may be questions that are displayed in an irregular or otherwise difficult to read manner.

J. Internet Disconnection and Disruptions: As stated in section I, competitors are responsible for having a sufficiently stable internet connection during the matches. In the following limited circumstances, however, a match will be restarted and --- if the issue is not capable of being quickly resolved --- postponed:

- (a) clear and significant internet disruption or disconnection in the first minute of a regular season match;
- (b) clear and significant internet disruption or disconnection in the first two minutes of a playoff match;
- (c) clear and significant internet disruption or disconnection in the first three minutes of a finals match.

For purposes of this section, a “clear and significant” internet disruption or disconnection is an interruption that prevents a competitor from participating for more than 30 seconds.

At the conclusion of the regular season, all competitors who qualify for the playoffs will be asked if they would prefer a more strict or less strict rule regarding internet connections. If both competitors in a playoff match prefer a more strict rule or if both competitors prefer a less strict rule, than an alternative, agreed-upon rule will be designated for that specific match.

K. Role and Duties of Officials: Any individual is eligible to serve as an official. Referees can volunteer for the role by contacting the Association and providing information regarding their availability. Regular season match-ups may or may not be officiated depending upon availability. All playoff match-ups will be officiated.

L. Publication of Statistics: The Association will maintain on a website a list of statistics and season standings that will be updated weekly. At a minimum, such information will include: (1) a leaderboard of the top performers in the different statistical categories; (2) overall standings; and (3) week-by-week matchup results.

M. Inability to Schedule Match-Up: In the event that a match-up is unable to be scheduled due to the unavailability of one or both competitors, GMCA reserves the discretion: (1) forfeit the match

on behalf of the competitor who was deemed predominantly responsible for the failure to complete the match; (2) vacate the match with or without the scheduling of a replacement match.

N. Appeals and Misconduct: Any competitor may appeal any result or decision to the Association. Such appeal must include a detailed explanation of the complaint. The Association will ultimately have full authority to determine appropriate responsive action.