

MSO 2020 Mental Calculation Rules

This online competition is an opportunity for human calculators to compete and demonstrate their talents in mental mathematics.

So we expect that all participants compete in an honest manner, as is usually the case among this community!

Here are some specific rules that you should be aware of to keep the competition fair.

1. Mental Calculation

1. Do not use a calculator on any device.
2. Do not use writing equipment like pens and paper. Do not have these available with you during the competition.
3. Do not write/type any intermediate steps during the calculation.
4. Do not use reference materials or notes. Do not have these available with you during the competition.
5. Do not use any applications during the competition, except for those that are strictly necessary, such as Zoom.
6. Do not allow anyone to assist you for the calculations, for example by using a calculator and telling you the answers.
7. You must have a webcam showing you and your screen to help us monitor how participants follow the rules above.

2. Presentation of Answers

1. Answers must be unambiguous. If the judge doesn't understand your answer, it will score zero marks. The decision of the judge is final.
 1. For days of the week: 1 = Monday; 2 = Tuesday; etc. Alternatively, participants can answer using English ("e.g. Mon" = Monday) or in another common language. If a participant prefers to use different numbering (e.g. 1 = Thursday) then they should explain to the judge on the Zoom call before the start of the round.
 2. Fractions must be written in a mixed format in their simplest form. So $4\frac{1}{2}$ cannot be written as $\frac{9}{2}$, $3\frac{3}{2}$ nor $4\frac{10}{20}$.
 3. Prime factorizations may be written in any clear and sensible format, e.g. " $2^2 \cdot 2^3$ ", " $2^3 \times 3$ ", " $3 \cdot 2^3$ " or " $2, 3, 2, 2$ ".

2. The first answer presented by the participant is their final answer and cannot be changed. However, if the participant notices that they have made a typo when writing their answer they may correct this. If the judge accepts that it was a typo rather than an error or intermediate working, it may be accepted.
3. For the Qualification and Semi-final rounds, all answers must be written in the private chat.
 1. Any answer written in the public chat will score zero.
 2. If a participant writes answers to more than one question in the public chat, they will be expelled from the event as it is distracting and unfair to the others.
4. Any threatening or inappropriate behaviour in the Zoom call will mean the participant will be disqualified and expelled from the event.

3. Limitations of Technology

1. If the webcam arrangement does not clearly show the participant's face, their hands and the screen they type on, the participant will not be permitted to compete. Please test this beforehand to avoid wasting time during the competition!
2. If the technology of a participant fails, including poor internet, the participant could score zero marks for affected questions. However the organizers will try to accommodate small technical problems, where possible. Please understand that we cannot wait for too long because it would delay the schedule of the competition.
3. Participants must use their real name on the Zoom call.

4. Scoring

1. There are no partial marks for partial solutions.
2. If a participant believes that there has been a mistake with the scoring, they should inform the judge as soon as possible.
3. For "best in 60 seconds" questions, the winner is participant whose answer is closest (in absolute difference) to the true answer. So for $\frac{7}{9}$ the response 0.78 would beat the response 0.775.
4. For questions with a variable score depending on the accuracy, the number of correct decimal places is calculated by comparing the true answer T with the participant's response P . So, for example, if $T - 0.005 < P < T + 0.005$ then the participant's response has (at least) 2 decimal places correct.

5. Sequence of Events

1. Participants must join the Zoom call at the correct time. If a participant does not arrive on time, they may not be permitted to compete. However, if the organizers can find an easy way to allow a late competitor to compete, then they will try to do so. In most situations it will not be possible.
2. During the competition, we will announce the exact timing of tie-breaks, semi-final rounds and final rounds. Participants should listen for announcements of when they should be ready to compete. The organizers will give as much notice as possible.