Extra Help:
Competition Series Rules & Procedures

The *MATHCOUNTS Competition Series Official Rules + Procedures* is available to the public at www.mathcounts.org/official-rules-procedures. Registered coaches are expected to be familiar with and abide by these rules.

Should there be a rule violation or suspicion of irregularities, the MATHCOUNTS coordinator has the obligation and authority to exercise his/her judgment regarding the situation and take appropriate action, which might include disqualification of the suspected student(s) from the competition.

Below are the few sections of the rules most commonly referenced by coordinators on Competition Day. See pg. 61 for specific rules and guidelines regarding advancement and substitutions.

Registration and Accommodations

- Each school can register up to **12 students in grades 6-8.** Only 1 team (of up to 4 students) per school is eligible to compete officially. Students registered as individuals cannot help the school's official team.
- Students in grades 6-8 whose official school of record will not register for the Competition Series and will not support their participation through the school are eligible to participate as non-school competitors (NSCs). Parents/guardians must contact the school officials at their student's school of record to confirm that the school will not allow a school-based registration before completing an NSC registration. NSCs may only compete as individuals.
- Late registrations may be accepted at the discretion of the national office and coordinators, but **are not guaranteed.** *We will accept all registrations received up until December 31, unless you, the coordinator, ask us not to do so.*
- Home schools and virtual schools can participate, but homeschools must complete the **2021-2022 Home School Participation Form.** *The national office will send you these forms ahead of your competition, and homeschool students not included on the form are not eligible to compete.*
- A student who is unable to attend a competition due to **religious observances** may take the written portion of the competition **up to 1 week in advance of the scheduled competition**, at the discretion of the coordinators. All competitors from that student's school must take the Sprint and Target Rounds at the same earlier times.
- **Reasonable accommodations may be made to allow students with special needs to participate**, but these must be requested before the competition. Some accommodations are *never* allowed, including granting a student extra time or allowing a student to use a calculator for the Sprint or Countdown Rounds.

Countdown Round and Scoring

- **At chapter and state competitions, the CDR may be conducted officially, unofficially or omitted.** However, the use of an official CDR must be consistent for all chapters within a state. In other words, *all* chapters within a state must use the CDR officially in order for *any* chapter within a state to use it officially. See pg. 55.

- **The team score assumes 4 students.** The team score is calculated by dividing the sum of the team members' Individual Scores by 4 (even if the team has fewer than 4 members) and adding twice the number of Team Round questions answered correctly. *This means teams of fewer than 4 students are at a disadvantage.* See pg. 53.
- **Ties should be broken using a tie-breaking algorithm** if possible, and using the tiebreaker round if the algorithm is not sufficient. In general, questions in the Target, Sprint and Team Rounds increase in difficulty so that the most difficult questions occur near the end of each round. See pg. 53.
- For ties between individuals, **the student with the higher Sprint Round score will receive the higher rank.** If a tie remains after this comparison, specific groups of questions from the Target and Sprint Rounds are compared. *Specific instructions and question groups are specified on your Tally Sheet.* See pg. 53.
- For ties between teams, **the team with the higher Team Round score, and then the higher sum of the team members' Sprint Round scores, receives the higher rank.** If a tie remains after these comparisons, specific questions from the Team Round will be compared. *Specific instructions and question groups are specified on your Tally Sheet.* See pg. 53.

Calculators

- **Calculators are not permitted in the Sprint and Countdown Rounds**, but they are permitted in the Target, Team and Tiebreaker (if needed) Rounds.
- When calculators are permitted, students may use any calculator (including programmable and graphing calculators) that **does *not* contain a QWERTY (typewriter-like) keypad.** Calculators that have the ability to enter letters of the alphabet but do not have a keypad in a standard typewriter arrangement are acceptable.
- **Smart phones, laptops, tablets, iPods®, personal digital assistants (PDAs) and any other "smart" devices are not considered to be calculators** and may not be used during competitions.
- **Students may not use calculators to exchange information** with another person or device during the competition.
- **Coaches are responsible for ensuring their students use acceptable calculators, and students are responsible for providing their own calculators.** Coordinators are not responsible for providing Mathletes with calculators or batteries before or during MATHCOUNTS competitions. Coaches are strongly advised to bring backup calculators and spare batteries to the competition for their team members in case of a malfunctioning calculator or weak or dead batteries. Neither the MATHCOUNTS Foundation nor coordinators shall be responsible for the consequences of a calculator's malfunctioning.

Forms of Answers and Additional Rules

- **Pagers, cell phones, tablets, iPods® and other MP3 players should not be brought into the competition room.** Failure to comply could result in dismissal from the competition.
- **All answers must be legible.** See pg. 39 for the Forms of Answers instructions.
- **Pencils and paper** will be provided for Mathletes by competition organizers. However, students may bring their own pencils, pens and erasers if they wish. They may not use their own scratch paper or graph paper.
- **Use of notes or other reference materials** (including dictionaries and translation dictionaries) is prohibited.
- **Specific instructions stated in a given problem** take precedence over any general rule or procedure.
- **Communication with coaches is prohibited during rounds but is permitted during breaks.** All communication between guests and Mathletes is prohibited during competition rounds. Communication between teammates is permitted only during the Team Round.

We recommend ensuring your scoring room volunteers have printed copies of the **Forms of Answers** page with them. We have formatted this to fit on a single page, which is on pg. 39 and also at www.mathcounts.org/official-rules-procedures.

FORMS OF ANSWERS

The following rules explain acceptable forms for answers. Coaches should ensure that Mathletes are familiar with these rules prior to participating at any level of competition. Competition answers will be scored in compliance with these rules for forms of answers.

Units of measurement are not required in answers, but they must be correct if given. When a problem asks for an answer expressed in a specific unit of measure or when a unit of measure is provided in the answer blank, equivalent answers expressed in other units are not acceptable. For example, if a problem asks for the number of ounces and 36 oz is the correct answer, 2 lb 4 oz will not be accepted. If a problem asks for the number of cents and 25 cents is the correct answer, $0.25 will not be accepted.

All answers must be expressed in simplest form. A "common fraction" is to be considered a fraction in the form $\pm\frac{a}{b}$, where a and b are natural numbers and GCF(a, b) = 1. In some cases the term "common fraction" is to be considered a fraction in the form $\frac{A}{B}$, where A and B are algebraic expressions and A and B do not have a common factor. A simplified "mixed number" ("mixed numeral," "mixed fraction") is to be considered a fraction in the form $\pm N\frac{a}{b}$, where N, a and b are natural numbers, $a < b$ and GCF(a, b) = 1. Examples:

Problem: What is 8 ÷ 12 expressed as a common fraction? *Answer:* $\frac{2}{3}$ *Unacceptable:* $\frac{4}{6}$

Problem: What is 12 ÷ 8 expressed as a common fraction? *Answer:* $\frac{3}{2}$ *Unacceptable:* $\frac{12}{8}$, $1\frac{1}{2}$

Problem: What is the sum of the lengths of the radius and the circumference of a circle of diameter $\frac{1}{4}$ unit expressed as a common fraction in terms of π? *Answer:* $\frac{1+2\pi}{8}$

Problem: What is 20 ÷ 12 expressed as a mixed number? *Answer:* $1\frac{2}{3}$ *Unacceptable:* $1\frac{8}{12}$, $\frac{5}{3}$

Ratios should be expressed as simplified common fractions unless otherwise specified. Examples:

Acceptable Simplified Forms: $\frac{7}{2}$, $\frac{3}{\pi}$, $\frac{4-\pi}{6}$ *Unacceptable:* $3\frac{1}{2}$, $\frac{\frac{1}{4}}{3}$, 3.5, 2:1

Radicals must be simplified. A simplified radical must satisfy: 1) no radicands have a factor which possesses the root indicated by the index; 2) no radicands contain fractions; and 3) no radicals appear in the denominator of a fraction. Numbers with fractional exponents are *not* in radical form. Examples:
Problem: What is $\sqrt{15} \times \sqrt{5}$ expressed in simplest radical form? *Answer:* $5\sqrt{3}$ *Unacceptable:* $\sqrt{75}$

Answers to problems asking for a response in the form of a dollar amount or an unspecified monetary unit (e.g., "How many dollars...," "How much will it cost...," "What is the amount of interest...") should be expressed in the form ($) a.bc, where a is an integer and b and c are digits. The only exceptions to this rule are when a is zero, in which case it may be omitted, or when b and c are both zero, in which case they both may be omitted. Answers in the form ($) a.bc should be rounded to the nearest cent, unless otherwise specified. Examples:
Acceptable Forms: 2.35, 0.38, .38, 5.00, 5 *Unacceptable:* 4.9, 8.0

Do not make approximations for numbers (e.g., π, $\frac{2}{3}$, $5\sqrt{3}$) in the data given or in solutions unless the problem says to do so.

Do not do any intermediate rounding (other than the "rounding" a calculator performs) when calculating solutions. All rounding should be done at the end of the calculation process.

Scientific notation should be expressed in the form $a \times 10^n$ where a is a decimal, $1 \leq |a| < 10$, and n is an integer. Examples:
Problem: What is 6895 expressed in scientific notation? *Answer:* 6.895×10^3
Problem: What is 40,000 expressed in scientific notation? *Answer:* 4×10^4 *or* 4.0×10^4

An answer expressed to a greater or lesser degree of accuracy than called for in the problem will not be accepted. Whole-number answers should be expressed in their whole-number form. Thus, 25.0 will not be accepted for 25, and 25 will not be accepted for 25.0.

The plural form of the units will always be provided in the answer blank, even if the answer appears to require the singular form of the units.