FAIRFIELD COUNTY MATH LEAGUE
Instructions for Students.

1. Calculators are **not** allowed in FCML.
2. Until you are told to start, keep all test papers face down.
3. Write your name, school and circle "A-team" or "B-team" on the back of the exam paper. Do not abbreviate the name of your school, and be sure to complete all these details legibly, as improperly labeled papers will not count. (This also applies to the team round.)
4. Do not pick up the exam paper or try to read a problem prior to the starter's signal to begin.
5. You will have ten minutes to answer three questions. The first question is worth 1 point, the second is worth 2 points, and the third is worth 3 points.
6. Place your answers in the designated area of the exam sheet. No credit will be given for answers written elsewhere.
7. In the individual rounds and the team round, you will be given a 2-minute warning and a 15-second warning.
8. When the signal is given to stop, you must **stop** immediately, **put your pencil down**, and hold your paper up.
9. Geometric figures are not necessarily drawn to scale.
10. Expression of your answers:
    (a) All answers must be simplified.
    (b) Fully reduce all fractions.
    (c) All answers, including those involving fractions, must be unambiguously stated.
    Note: *x/yz* and *x/y + z* (written using slanting fraction lines) are ambiguous, and therefore will not be accepted.
    (Please note that slanting fraction lines are not allowed at the state competition.)
    (d) Answers may be given in factored or unfactored form (unless the form is specified). For example, the answer $x^2 + 5x + 6$ may be written as $(x + 2)(x + 3)$ and $2\sqrt{3} + 2$ may be written as $2(\sqrt{3} + 1)$. However, partial factorization will not be accepted; for example, $6x(x + 1)$ would be accepted but $3x(2x + 2)$ would not. Also, unsimplified expressions such as $6x(x + 1) + 1$ will **not** be accepted. (Please note that the rules for the state competition do **not** allow factored form, unless the instructions state otherwise.)
    (e) Repeating decimals will not be accepted.
    (f) Rationalize all denominators.
    - For example, $\frac{1}{\sqrt{2}}$ must be written as $\frac{\sqrt{2}}{2}$.

    (g) All radicals must be simplified, with the index of the radical being as small as possible.
    - For example, $\sqrt{12}$ must be written as $2\sqrt{3}$; $\sqrt[6]{25}$ must be written as $\sqrt[3]{5}$.

    (h) Unless specified otherwise in the problem, numerical answers must be fully simplified.
    - For example, $2 \cdot 3^5$ must be written as 486.

    (i) Negative exponents will not be accepted.
    - For example, $x^2 y^{-3}$ must be written as $\frac{x^2}{y^3}$.

    (j) If you are asked to evaluate more than one variable, label your answers.
    - For example, write "$x = 5,\ y = -6$"

    (k) Ordered pairs must be written with the variables in alphabetical order and must include parentheses and a comma.
    - For example, for the above solution, (5,−6) is acceptable, but (−6, 5) is **not** acceptable.

(l) When writing solutions of equations, a comma between solutions will be interpreted as meaning "or". When writing solutions to inequalities, no commas are to be used. Interval notation and set notation are also acceptable.

(m) In complex numbers, the forms $\frac{a+b\mathrm{i}}{c}$ and $\frac{b\mathrm{i}+a}{c}$ (where *a*, *b*, and *c* are integers) are acceptable, provided that $c \geq 2$ and that *a* and *c* are relatively prime or *b* and *c* are relatively prime. When, for example, the answer is 5, a student who writes "$5+0\mathrm{i}$" will not be penalized.

(n) An answer may be given as a scalar multiple of a matrix, provided the entries of the matrix are integers whose greatest common factor is 1.

- For example, these are acceptable: $\begin{bmatrix} -2 & -\frac{10}{3} \\ \frac{8}{3} & 4 \end{bmatrix}$, $\frac{2}{3}\begin{bmatrix} -3 & -5 \\ 4 & 6 \end{bmatrix}$;

these are not acceptable: $\frac{1}{3}\begin{bmatrix} -6 & -10 \\ 8 & 12 \end{bmatrix}$, $2\begin{bmatrix} -1 & -\frac{5}{3} \\ \frac{4}{3} & 2 \end{bmatrix}$

11. Answers will be posted continually as the match proceeds. You may take appeals to the arbitrators at any stage in the match. There will also an opportunity for appeals after the team round.
12. Once the appeals process is over, please remember that **the arbitrators' decision is final**.