



# Current Algebra PoW

The Math Forum's PoWs provide non-routine constructed response problems. The Algebra problems target concepts typically learned in an Algebra I class. Memberships and mentoring options are available at the individual, class, school, and district levels.

## Hoop Heroes - to be posted March 26, 2007

In leading their basketball team to victory, Kylie and Shaniqua were the top two scorers in the championship game. Using the following clues, determine how many points each girl scored:

- If you subtract two times Kylie's points from three times Shaniqua's points, the difference is less than six.
- Shaniqua scored at least as many points as nine more than one-fourth of Kylie's points.
- Kylie scored fewer than 20 points.



Remember that in basketball you can only score whole numbers of points.

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Learn more about the PoWs at [http://mathforum.org/problems\\_puzzles\\_landing.html](http://mathforum.org/problems_puzzles_landing.html)

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Win a PoW Teacher Membership or a Dr. Math book! To enter the drawings, write your answer and an explanation of your solution on this sheet, fill out the green entry card, and staple them together. Return it to Booth 1319.

# The Algebra Problem of the Week Scoring Rubric

A full-page version of this file is available to the public via the Scoring Guide link at <http://mathforum.org/algpow/>. Problem-specific scoring rubrics, as well as “Expected Solution” documents, are available to Teacher Members who choose to mentor their students’ work using our online environment.

For each category, choose the level that *best describes* your work

	Novice	Apprentice	Practitioner	Expert
<b>Problem Solving</b>				
<b>Interpretation</b>	I do not understand much of the problem.	I don't understand all of the math concepts in the problem.  I didn't attempt to solve all of the parts.	I understand all of the math concepts in the problem.  I attempted to solve all parts of the main problem.	I understand the Extra question and solved it correctly (and am at least a Practitioner in Strategy).
<b>Strategy</b>	I do not know how to set up the problem.	I picked an incorrect strategy.  My strategy relied on luck to get the right answer.  I used guess and check exclusively, with no algebraic techniques.	I used a sound strategy and solved the problem with skill, not luck.  I used algebraic techniques, including variables, expressions, and equations.	I used two separate strategies or an unusual or sophisticated strategy.
<b>Accuracy</b>	I think I made many errors.	My work is mostly accurate, with a few errors, such as calculation mistakes or using incorrect units.	My work is accurate and contains no arithmetic mistakes.  I used appropriate units.  I left things in exact form if required.	[not possible for most problems]
<b>Communication</b>				
<b>Completeness</b>	I didn't write much, if anything, about how I found my answer.	I didn't define my variables.  I didn't explain where my expressions or equations came from.  I showed my work, but didn't explain it, or I explained what I did without showing any work.	I defined my variables.  I explained all of the steps taken to solve the problem.  I stated any equations and formulas used and explained where most of those equations came from.	I added useful extensions and further explanation of some of the ideas involved.
<b>Clarity</b>	My explanation is very difficult to read and follow.	My explanation isn't entirely unclear, but another student wouldn't be able to follow it easily.  My explanation is long and written entirely in one paragraph.  My explanation has many spelling, grammar, and typing errors.	I explained all of the steps in such a way that another student would understand.  I made an effort to check my formatting, grammar, spelling, and typing, though there may still be a few small mistakes.	My answer is very readable and it looks good!  My organization makes my ideas especially clear.
<b>Reflection</b>	These items are reflective:  I did nothing reflective.	I showed how I checked my own answer.  I explained why my answer is reasonable.  I suggested a hint that I would give to another solver.  I did one reflective thing.	I connected the problem to another problem or experience.  I explained where I'm stuck.  I summarized my process.  I did two reflective things.	I explained why I think the problem is easy or difficult.  I <i>revised</i> and improved my work.  I did three or more reflective things or I did a great job with two.

## Teacher Support for *Hoop Heroes*

Each Current Problem of the Week (and consequently many in the library) includes a list of topics and pointers to related resources. Those problems included in our Write Math with the Math Forum product include alignments to many state standards and textbooks. This table is adapted from the full online Teacher Support page for this problem that includes links for all of the resources. These pages are available to members at <http://mathforum.org/pow/support/>.

<b>Topics</b> linear inequalities graphing systems of equations	<b>Problems Library</b> AlgPoW: Tennis, Anyone? AlgPoW: He Shoots, He Scores!
<b>Teacher2Teacher</b> Graphs	<b>Ask Dr. Math</b> Graphing Inequalities Inequalities Inequalities: Add or Subtract?