



Current Pre-Algebra PoW

The Math Forum's Problems of the Week provide non-routine constructed response problems. The Pre-Algebra problems target concepts typically learned in grades 6-8. Memberships and mentoring options are available at the individual, class, school, and district levels.

Measuring Melons - to be posted April 24, 2006

Jerson is selling fruit at the Farmers' Market. To attract customers to his booth, he has made up a contest! He has these photos of combinations of fruit on display. His contest is to find out how much each fruit weighs.



8.25 lbs.



9.5 lbs.



11.5 lbs.

Note: Assume that both of the melons weigh the same, both of the pineapples weigh the same, and both of the limes weigh the same.

Melanie looks at his photos and tells him, "I know how much one melon weighs." How might Melanie have figured out how much one melon weighs? How much does each type of fruit weigh?

Learn more about the Problems of the Week at <http://mathforum.org/pow/powcharges.html>

Win a t-shirt! In order to enter the drawings for t-shirts, 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 630.

The Pre-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/prealgpow/>. 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
Problem Solving				
Interpretation	I do not understand much of the problem.	I understand some of the math in the problem. I attempted part of the problem.	I understand all of the math in the problem. I attempted all parts of the main problem.	I understand the Extra question and solved it correctly (and am at least a Practitioner in Strategy).
Strategy	I didn't know how to set up the problem.	I tried a strategy that makes sense, but it isn't enough to solve the whole problem. My strategy relied on luck.	I picked a sound strategy. I solved the problem through skill, not luck.	I used two separate strategies <i>or</i> I used an unusual or sophisticated strategy.
Accuracy	My work contains many errors.	Most of my work is accurate. I may have a couple of errors. I didn't use correct units.	My work is accurate and contains no arithmetic mistakes. I used appropriate units.	[not possible for most problems]
Communication				
Completeness	I wrote very little to explain how I solved the problem.	I included an explanation but none of my calculations. <i>or</i> I included calculations without any explanation. I didn't explain why I did several steps.	I explained almost all of the steps taken to solve the problem. I explained how I came up with my equations, expressions, and calculations.	I included some extra ideas or explanation about some of the concepts in the problem.
Clarity	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 is written in one paragraph. My spelling and typing errors make my explanation hard to understand.	I explained all of the steps in such a way that another student could understand. I made an effort to check my grammar, formatting, spelling, and typing.	My answer is very readable and it looks good! My organization makes my ideas especially clear.
Reflection	These items are reflective: I did nothing reflective.	I showed how I checked my own answer. I explained why I think my answer is reasonable. I suggested a hint that I would give to another student. I did one reflective thing.	I connected the problem to another problem or experience. I explained where I'm stuck. I summarized the process I used. 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 of them.

Teacher Support for Measuring Melons

Each Current Problem of the Week (and consequently many in the library) includes a list of topics, pointers to related resources, and NCTM Standards correlation. 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/>.

Topics	Problems Library	Ask Dr. Math	Math Tools
algebraic reasoning decimals variables	FunPoW: Nuts in a Bowl PreAlgPoW: Lucky Lollipops PreAlgPoW: Ostrich Llama Count	Pre-Algebra: Equations and Other Tips Solving Algebra Word Problems Fractions, Decimals, Percentages - FAQ	Algebra: Use of Variables Math 7: Algebra and Expressions
Teacher2Teacher Algebra Help - FAQ	NCTM Standards - Grades 6-8 Algebra Reasoning and Proof Problem Solving Communication	Other Resources A Tour of Measurement <i>Dr. Math Gets You Ready for Algebra</i> <i>Dr. Math Explains Algebra</i>	and more!