

Announcing the Fifth Annual
Student Mathematics Problem Solving Competition

Presented by

Sacramento Area Mathematics Educators & Sacramento State Mathematics Project
at their annual mini-conference for teachers:

"Making Mathematics Meaningful"

Rules:

1. Students are to complete the problems individually or with 1 other student partner.
2. Clearly indicate the student name(s), the teacher's name and the grade level of the student(s) on the submission.
3. Student submissions may be on paper, on a poster, use video or audio recording. If the submission is electronic, then submit it to Lfury@wpusd.k12.ca.us ahead of the deadline February 8, 2017 4:00 pm for checking the compatibility of your submission.
4. Students may do either problem, but do not need to do both.
5. Entries must be delivered to Lori Fury by email Lfury@wpusd.k12.ca.us or mail prior to February 8, 2017, 4:00 pm. If a student would like to mail your submission, please get contact information for Lori Fury from the student's teacher. Judging will take place before the conference. Students will be invited to attend special student competition session at the S.A.M.E. conference on Saturday, March 4, 2016 from 12:05 - 12:25 pm and then stay for lunch and awards from 12:30 - 1:30--but that is optional and not required! The specific location will be communicated in January.

Students are welcome to make arrangements with their teacher to attend the conference where winners are announced if they would like, but this is not required. If a student attended, she or he would only need to attend the Student Exhibit portion of the conference from 12:05 - 12:25, but could stay through the announcement of the winners at lunch from 12:30 - 1:30. We would need the student's teacher to communicate the number of students and their family members to attend by Monday, February 6, 2017.

At the Exhibit Session, as teachers roam through, looking at student work, the students could explain their thinking to teachers in person. This is not part of the competition. However, we know some students might like to attend, and we are certain that teacher attendees would like to hear students talking about their thinking. Please talk with your teacher about the possibility of attending the conference.

Student Entries will be awarded points on the basis of the quality of their solution process and the clarity of their explanations—not on the basis of the method the student chooses to communicate the solution process, nor which problem students select to solve. There is no advantage given to students that provide a video of them speaking and presenting their solution over those students who submit solutions on paper or a poster.

Criteria which will be used to award points include:

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1. Reasoning is fully explained and justified and in context
2. Both the solution method and answer are correct.
3. The explanation of the process used to determine the solution is complete and well documented—the explanation might include words, calculations, diagrams or any other material needed to fully communicate the process. There is a logical progression of ideas made to reach a conclusion. Thoughts and calculations are fully explained so the reader (or viewer) can understand the student thought process.

Winners will be chosen for each grade level, so that grade 6 students only compete against other grade 6 students, etc. If you have any questions, please ask your teacher to email them to Lori Fury Lfury@wpusd.k12.ca.us

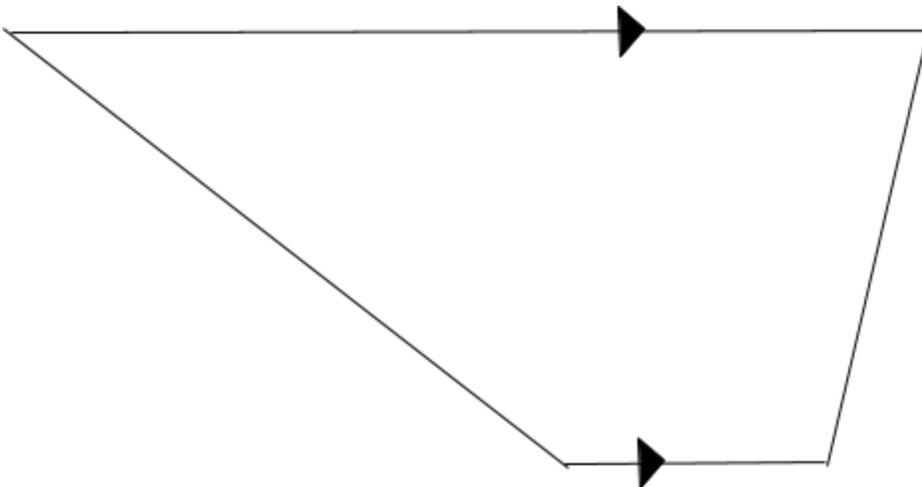
Problem A: 500 Pounds of Pennies:

Read about [Ira Keys](#) who deposited 500 lbs of pennies at the bank. Instead of depositing them all at once, imagine if Ira had been making annual deposits of his pennies. Using annual deposits, how much money could he expect to have in the bank now, including interest? Clearly explain.

Visit: <http://www.newser.com/story/201459/man-81-cashes-in-500-lbs-of-pennies-worth-not-a-lot.html>

Problem B: Trapezoid to Triangle

Find a triangle with the same area as the trapezoid shown:



If someone wanted to recreate your triangle from the trapezoid, what directions would you give them? Use precise mathematical statements so that someone could recreate it without looking.