

Cal Poly Department of Mathematics

Puzzle of the Week

April 17 - 23, 2009

Following the revolution, the queen of Greediopia (population 130, including her Highness) has lost all power including the right to vote, but she does retain the power to suggest redistribution of salaries. Each suggestion is voted upon by citizens, and if there are more votes in favor than against the new salary distributions are put in place. Each resident (including the queen) begins with a salary of one dollar, salaries are always whole numbers, and the sum of all salaries at any time must remain 130.

Assume each resident is perfectly greedy: he or she can be counted upon to vote in favor of a redistribution if his or her salary goes up, vote against it if it goes down, and not to bother voting if it does not change. What is the maximum salary a clever queen can get for herself, and how many votes must she call before she gets it?

Solutions should be submitted to Morgan Sherman:

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before next Friday. Those with correct and complete solutions will have their names listed in next week's email announcement. Anybody is welcome to make a submission.