

Name:

Math Olympiad Discussion! – Problem Due: – February 12, 2004

Who's the Winner?

At Math Olympiad on Thursday, we talked about Voting Systems and choosing a president of the European Union. You may need to do some research to find out the answers! Remember, the systems that we presented are as follows:

1) Every country gets two votes. The candidate with the most votes in that country gets the two votes.

2) (Winner-Take-All) Every country gets as many votes as it has citizens. The candidate with the most votes in that country gets this number of votes.

3) (Popular Vote) Every person gets one vote. You add the number of votes each candidate received in each country to come up with his or her total number of votes.

4) (5-4-3-2-1 System) In every country, the candidate with the most votes gets a score of 5. The candidate with the second most number of votes gets a score of 4. Continue until the fifth candidate gets a score of 1. Then add together the scores of all the candidates to see who wins.

5) In every country, the people vote and decide who they might support. Any candidate with over 15% of the vote will get some votes, proportional to how many total votes the country has. Then add up these totals over all the countries. For example, Candidates A, B, and C receive 40, 25, and 15 percent of the vote respectively in a country with 80 million people. Then Candidate A will win $(80 \text{ million}) \times 40 / (40 + 25 + 15) = 40 \text{ million votes}$.

(1) Discuss with your family which method seems the most fair. We will vote on this on February 12th.

(2) If each state has an opinion, which system is most like voting in the US Senate?

(3) If each state has an opinion, which system is most like voting in the US House of Representatives?

(4) Which system do we use to elect the President of the United States?

(5) Which system do Republicans use in their primaries? Which system do Democrats use in theirs?