6.RP Voting for Two, Variation 2

Alignments to Content Standards: 6.RP.A

Task

John and Will ran for 6th grade class president. There were 36 students voting. John got two votes for every vote Will got. How many more votes did John get than Will?

IM Commentary

This is the second in a series of tasks that are set in the context of a classroom election. It requires students to understand what ratios are and apply them in a context. The simple version of this question just asked how many votes each gets. This has the extra step of asking for the difference between the votes.

The problem is useful as a means of highlighting the multiple ways that one can reason about a situation involving ratios. This problem can be used to solidify students' understanding of ratio tables or can be used to highlight how one can use unit rates to reason in a ratio context, which is explained in the solutions. Each task has some commentary or solutions that clarify some of the opportunities made available by the particular task.

Solutions

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Solution: Computing votes

A straightforward approach is to simply compute the number of votes each person receives and then subtract the two to find the difference. The votes are in three equal parts, two for John and one for Will. Since it is given that there are 36 votes, each part must then be $\frac{1}{3} \times 36 = 12$ votes. Therefore:

$2 \times 12 = 24$ votes for John

$1 \times 12 = 12$ votes for Will

$24 - 12 = 12$ votes difference

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Solution: Applying fractions

A faster and perhaps more sophisticated approach would be to realize that with John getting 2 of the equal shares of votes and Will getting only 1, then John gets one whole share more than Will, or $1/3$ of the votes.

$1/3 \times 36 = 12$ more votes for John.

This approach, which can probably be done without paper and pencil, avoids having to compute the votes for both candidates and subtracting.

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Solution: Ratio tables

As with variation 1, a more basic approach could be taken using a ratio table. Ultimately students should be able to reason as in solutions 1 and 2, but for those students not ready for that level of abstraction, ratio tables provide an important bridge.