



Problem of the Week

Problem C and Solution

Your Vote Counts

Problem

In an election for a representative on school council, there were only two candidates.

Sophia received 60% of the total votes and Mireille received all the rest. If Sophia won by 28 votes, then how many people voted?

Solution

Solution 1

If Sophia received 60% of the votes, then Mireille received 40% of the total number of votes. The difference between them, 20%, represents 28 votes.

We are interested in determining 100% of the votes, that is, the total number of votes cast. Since we know that 20% of the total votes cast was 28 votes and $5 \times 20 = 100$, then a total of 5×28 or 140 people voted.

Solution 2

The second solution uses an algebraic approach.

Let n represent the total number of votes cast.

Since Sophia received 60% of the total votes, she received $0.6 \times n$ or $0.6n$ votes.

Since Mireille received all of the remaining votes, she received $0.4 \times n$ or $0.4n$ votes.

The difference between the number of votes received by Sophia and the number of votes received by Mireille was 28. So,

$$\begin{aligned}0.6n - 0.4n &= 28 \\0.2n &= 28 \\\frac{0.2n}{0.2} &= \frac{28}{0.2} \\n &= 140\end{aligned}$$

Therefore, 140 people voted.