MATHCOUNTS® Problem of the Week Archive

Voter Turnout – November 5, 2018

Problems & Solutions

In the town of Newtonville, 60% of the registered voters turned out to cast their votes in the most recent election. If 2814 residents of Newtonville voted in this election, how many registered voters were there in Newtonville?

> *We are told that 2814 represents 60% of the registered voters in Newtonville. Thus, there are 2814 ÷ 0.60 =* **4690** *registered voters in Newtonville.*

At one polling center in Newtonville, from 7:00 a.m. to 5:00 p.m., an average of 23 voters cast their votes each hour. At this rate, how many voters cast their votes at that polling center?

> *We know for this particular polling center, that for the 10 hours from 7:00 a.m. to 5:00 p.m., on average, 23 people voted per hour. Therefore, at that particular polling center 23 × 10 =* **230** *voters cast their votes.*

At the same polling center, one-fifth of the voters cast their votes using a particular electronic voting terminal between noon and 3:00 p.m. During that time, there was a constant flow of voters using the voting terminal. What was the average number of minutes each voter took to cast his/her vote during this period? Express your answer to the nearest tenth.

> *From the previous problem, we know that a total of 230 voters cast their votes at that particular polling center. That means 230 ÷ 5 = 46 of those voters used the voting machine in question between noon and 3:00 p.m. There are 180 minutes in the 3 hours between noon and 3:00 p.m. It follows then, that during that time each voter took, on average, about 180 ÷ 46 ≈* **3.9** *minutes to cast his/her vote.*

Voter Turnout – November 5, 2018

Problems

In the town of Newtonville, 60% of the registered voters turned out to cast their votes in the most recent election. If 2814 residents of Newtonville voted in this election, how many registered voters were there in Newtonville?

At one polling center in Newtonville, from 7:00 a.m. to 5:00 p.m., an average of 23 voters cast their votes each hour. At this rate, how many voters cast their votes at that polling center?

At the same polling center, one-fifth of the voters cast their votes using a particular electronic voting terminal between noon and 3:00 p.m. During that time, there was a constant flow of voters using the voting terminal. What was the average number of minutes each voter took to cast his/her vote during this period? Express your answer to the nearest tenth.