

MATHCOUNTS[®] Problem of the Week Archive

American Idol Mania! – September 9, 2019

Problems

Season 17 of American Idol ended earlier this year. At the end of the season finale, each of the three judges was asked to share his/her opinion about who should win the contest; Laine or Alejandro. Each of the three judges responded and audiences around the country basically heard “Laine,” “Laine,” “Laine.” If each judge answered either “Laine” or “Alejandro,” how many additional ways could the judges’ responses have been heard?

Before hearing the results of the call-in voting on the season finale, viewers watch a couple of hours of songs from all ten of the finalists. This year, viewers may have noticed that there were conveniently 5 females and 5 males in the final group of ten. If a random group of ten distinct people is selected, and the probability of selecting a female for each individual selection is $\frac{1}{2}$, what is the probability that this group of ten people will consist of 5 males and 5 females? Express your answer as a common fraction.

It was reported that approximately 15.5 million telephone votes were cast. Each vote was for either Laine or Alejandro. If the ratio of “Laine votes” to “Alejandro votes” was 29:21, how many votes did Alejandro receive? What percent of the votes did Laine receive?