MATHCOUNTS® Problem of the Week Archive

Mother's Day Math – May 12, 2025

Problems & Solutions

Mother's Day is always the second Sunday in May. If Mother's Day is May 11, 2025, what will be the date of Mother's Day in 2030?

Let's figure out what day May 11 falls on in 2030. If it's a Sunday one year, then it's a Monday the next year, unless the next year is a leap year, in which case it jumps to Tuesday. Knowing this, we have May 11 being a Monday in 2026, a Tuesday in 2027, a Thursday in 2028 (leap year), a Friday in 2029 and a Saturday in 2030. That means that the next Sunday in 2030 is the next day, ***May 12****, and this would be the second Sunday of the month. (The first Sunday in May would be the* 5^{th}*.)*

It is believed that Anna Jarvis conducted the first Mother's Day celebration in 1908 and annual celebrations continued afterwards. It wasn't until the Mother's Day in 1914, however, that it was an official holiday declared by Congress to be the second Sunday in May. After this year's Mother's Day on May 11, what percent of the Mother's Days (starting in 1908) were officially recognized by Congress? Express your answer as a percent to the nearest whole number.

According to the problem, there have been Mother's Day celebrations every year starting in 1908. This means that there have been (2025 – 1908) + 1 = 118 Mother's Days. Of those, the Mother's Days from 1908 through 1913 were "unofficial." This is six Mother's Days. Therefore, there have been 112 Mother's Days that have been officially recognized by Congress of the total 118, which is $112 \div 118 \approx$ ***95****%, to the nearest whole number.*

Mother's Day is reported to be the busiest day of the year for many restaurants and the peak day of the year for long-distance telephone calls. It is also estimated (by Hallmark) that about 96% of American consumers take part in some way in Mother's Day. According to this last statistic, what is the probability that three randomly selected American consumers will each "take part in some way in Mother's Day?" Express your answer as a percent to the nearest whole number.

If we were to just select one random American consumer, the answer would be 96%, according to the statistic we're given. But we have three people and each of them has a 96% chance of participating in Mother's Day. (Since we randomly chose them, we can assume that if the first person participates in Mother's Day, that has no impact on whether the other two people participate.) The probability of three unrelated events occurring is equal to the product of the three individual probabilities, which is $.96 \times .96 \times .96 \approx .88 =$ ***88****% for this scenario.*

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