

# MATHCOUNTS<sup>®</sup> Problem of the Week Archive

## April Showers – April 30, 2018

### *Problems & Solutions*

Sun City earned its name because it rarely rains there. In fact, it rains only 54 days each year there, on average. What percent of the days in 2018 is it expected to rain in Sun City? Express your answer to the nearest hundredth.

*The percent of the days in 2018 it is expected to rain is  $54/365 = 0.1479452055 \approx 14.79\%$ .*

The rainiest month in Sun City is April. On average, it rains 10 days each year during the month of April. What is the average number of days it rains in a month other than April in Sun City?

*If it rains 10 days in Sun City during April and 54 days throughout the entire year, it must rain  $54 - 10 = 44$  days during the remaining 11 months of the year. That's an average of  $44 \div 11 = 4$  days per month.*

Penelope is going to attend a two-day conference in Sun City next year on April 23rd and 24th. Based on the information from the previous problem, what is the probability that it will rain neither day during Penelope's conference in Sun City? Express your answer as a common fraction.

*Since in Sun City it rains, on average, 10 days during the month of April, the probability that it will rain on any given day in April is  $10/30 = 1/3$ . That means the probability that it will not rain on any given day in April is  $1 - (1/3) = 2/3$ . Therefore, the probability that it will not rain on either of the two days Penelope is in Sun City attending the conference is  $(2/3)(2/3) = 4/9$ .*

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