

MATHCOUNTS[®] Problem of the Week Archive

More Winter on the Way – February 3, 2025

Problems

Over the weekend, the world's most famous groundhog, Punxsutawney Phil, enjoyed his favorite day of the year – Groundhog Day! According to historical data on Stormfax[®] Weather Almanac's website (stormfax.com/ghogday.htm), Phil has predicted a long winter 108 times, and an early spring 21 times from 1887 to 2024 (no data for nine of these years). That makes the odds of Phil seeing his shadow, thereby predicting six more weeks of winter for this year, 36 to 7. Based on this information, what is the percent probability of Phil seeing his shadow? Express your answer as a percent to the nearest whole number.

Given this historical data, you might not be surprised to learn that when Phil emerged from his burrow in Gobbler's Knob this past Sunday, he **did** see his shadow, sending the message that winter will continue for another six weeks. Many people had hoped he wouldn't see his shadow so that spring would come early. Winter is officially from December 21 through March 19, inclusive. If Punxsutawney had predicted that spring was coming three weeks early this year, by what percent would the length of the normal winter be decreased? Express your answer as a percent to the nearest tenth.

Historically, Phil's winter forecasts have been correct 39% of the time. Suppose Phil's historical accuracy of predicting an early spring is 50%. Based on the previous problems, what would be his historical accuracy of predicting a long winter? Express your answer as a percent to the nearest whole number.