

Weather

Business



**ASSIGN
BUSTER**

In addition to being a member of AMASS, Joe was also the most popular person on any of the local news programs.

Joe was always trying to find innovative ways to make the weather interesting, and this was especially difficult during the winter months when the weather seemed to remain the same over long periods of time. Joey's forecast for next month, for example, was that there would be a 70% chance of rain every day, and that what happens on one day (rain or shine) was not in any way dependent on what happened the day before.

One of Joey's most popular features of the weather report was to invite questions during the actual broadcast. Questions would be phoned in, and they were answered on the spot by Joe. Once a 10-year-old boy asked what caused fog, and Joe did an excellent job of describing some of the various causes. Occasionally, Joe would make a mistake.

For example, a high school senior asked Joe what the chances were of getting 15 days of rain in the next month (30 days). Joe made a quick calculation: $(70\%) \times (15 \text{ days}/30 \text{ days}) = (70\%) (1/2) = 35\%$. Joe quickly found out what it was like being wrong in a university town.

He had over 50 phone calls from scientists, mathematicians, and other university professors, telling him that he had made a big mistake in computing the chances of getting 15 days of rain during the next 30 days. Although Joe didn't understand all of the formulas the professors mentioned, he was determined to find the correct answer and make a correction during a future broadcast.

Discussion Questions 1 . What are the chances of getting 15 days of rain during the next 30 days? 2. What do you think about Joey's assumptions concerning the weather for the next 30 days?

Please answer the two Discussion Questions in managerial format (as if you were sending your results to upper management). Elaborate on answers.

What are the chances of getting 15 days of rain during the next 30 days?

Solution: You have a Binomial Distribution with $p = 0.7$ $q = 1 - 0.7$.

$7 = 0.3$ $n = 30$ $x = 15$ Therefore, the probability of getting exactly 15 days of rain out of 30 days, is 0.0106 What do you think about Joey's assumptions concerning the weather for the next 30 days? Solution: Joe used simple probability calculations and therefore his assessment went wrong.