

Answer on Question #43130 – Math - Statistics and Probability

The probability that it will rain on any given day in the month of June is .02. What is the probability that it will rain once in the month of June?

Solution. Let $p = 0.02$ is the probability that it will rain on any given day in the month of June. Then the probability that it will not rain on any given day in the month of June is $q = 1 - p = 0.98$. There are 30 days in a June. The probability by Bernoulli's trial that it will rain once in the month of June is

$$P = \binom{30}{1} p^1 q^{30-1} = 30 \cdot 0.02 \cdot (0.98)^{29} \approx 0.33397.$$

Answer: $30 \cdot 0.02 \cdot (0.98)^{29} \approx 0.33397$.