Question 2

Consider a binary communication channel, with every digit in the input having a Bernoulli distribution with parameter $p = 0.8$ (i.e., the probability of sending 1 is p). A "word" contains 6 digits: X_1, X_2, ..., X_6.

Part 1: What is the probability that a word contains exactly four 1's and two 0's?

Solution

Answer

□

Part 2: What is the probability that a word contains at least four 1's?

Solution

Answer

□

Part 3: Assume that the first digit is $X_1 = 1$. What is the probability that the sum of the first two digits is 2?

Solution

Answer

□