

HW 3 Probability Distribution

There is a chance (0.10) that a bit transmitted through a digital transmission channel is received in error. X is the number of bits received in error of the next 4 transmitted. Answer these below questions:

1. Find the mass probabilities of all possible outcomes by `dbinom()`
(Hint: $X = 0, 1, 2, 3, 4$ when $n = 4$)
2. Find the mean and variance of this distribution using `rbinom()` by the Empirical Probability, if 100000 sets of 4 bits are transmitted.
3. Find the probability that the most errors is 3, $P(X \leq 3)$ using `pbinom()`
4. Draw this probability distribution using `barplot()` with all labels.