

Assignment 2 in L^AT_EX

AI1110: Probability and Random Variables

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12.13.5.15 Question: The probability that a student is not a swimmer is $\frac{1}{5}$. Then the probability that out of five students, four are swimmers is. The probability that out of five students, four are swimmers can be represented as:

$$P(X = 4) = \binom{5}{4} \cdot (0.8)^4 \cdot (0.2)^1$$

where $\binom{5}{4}$ is the binomial coefficient, given by:

$$\binom{5}{4} = \frac{5!}{4!(5-4)!} = 5$$

Substituting the values into the formula, we get:

$$P(X = 4) = 5 \cdot (0.8)^4 \cdot (0.2)^1$$