Assignment

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Question : A single letter is selected at random from the word ‘PROBABILITY’. The probability that it is a vowel is
Solution: Let X be an bernoulli rv defined as in Table I,

RV	Value	Description
X	0	Selection of non-vowels
	1	Selection of vowels

TABLE I
RANDOM VARIABLE X DECLARATION.

Where, The probabilities are as follows:

$$p_x(k) = \begin{cases} 7/11 & \text{if } k = 0 \\ 4/11 & \text{if } k = 1 \end{cases} \tag{1}$$

From Table I, The probability that the selected letter is a vowel is given by:

$$p_X(1) = \frac{4}{11} \tag{2}$$

Therefore, the probability that the selected letter is a vowel is $\frac{4}{11}$.

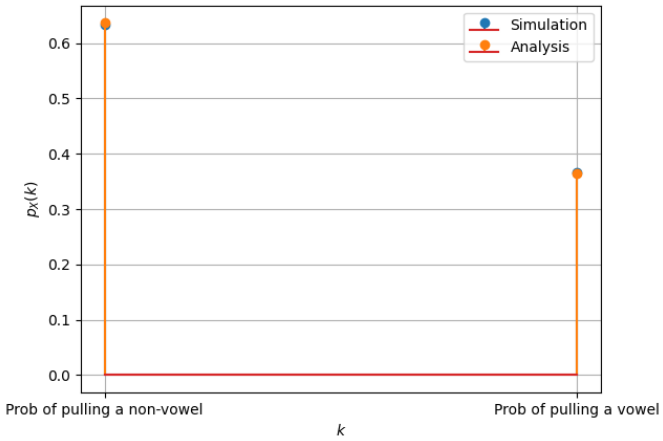

Fig. 1. Theoritical and practical values of probability