Assignment 2 in LaTeX

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Assignment 2

Problem 11.16.3.10 : A letter is chosen at random from the word 'ASSASSINATION'. Find the probability that letter is (i) a vowel (ii) a consonant.

Answer 11.16.3.10 :

(i) a vowel

Number of total letters in the given word is 13. Let S denote the sample space,

$$\therefore n(S) = 13 \tag{1}$$

Let X be the event containing vowels. So,

$$X = \{A, A, A, I, I, O\} \tag{2}$$

$$n(X) = 6 \tag{3}$$

Now,

$$\Pr(X) = \frac{n(X)}{n(S)} \tag{4}$$

$$= \frac{6}{13} \tag{5}$$

$\therefore$ The probability that the chosen word is a vowel is $\frac{6}{13}$.

(ii) a consonant

Let Y be the event containing vowels. So,

$$Y = \{S, S, S, S, N, T, N\} \tag{6}$$

$$n(Y) = 6 \tag{7}$$

Now,

$$\Pr(Y) = \frac{n(Y)}{n(S)} \tag{8}$$

$$= \frac{7}{13} \tag{9}$$

$\therefore$ The probability that the chosen word is a consonant is $\frac{7}{13}$.

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