

Question 11.16.3.1

If the letters of the word **ALGORITHM** are arranged at random in a row what is the probability the letters GOR must remain together as a unit?

Solution: Let

$$X = \begin{cases} 1, & \text{if GOR remain together as a unit} \\ 0, & \text{otherwise} \end{cases} \quad (1)$$

Then

$$p_X(1) = \frac{7!}{9!} \quad (2)$$

$$= \frac{1}{72} \quad (3)$$