Question 10.13.3.31

An integer is chosen between 0 and 100. What is the possibility that it is
(i) divisible by 7?
(ii) not divisible by 7?

Solution: Let

$$X = \begin{cases} 1, & \text{if number is divisible 7} \\ 0, & \text{if number is not divisible by 7} \end{cases} \tag{1}$$

Then

$$p_X(1) = \frac{7}{50} \tag{2}$$

$$p_X(0) = 1 - p_X(1) \tag{3}$$

$$= 1 - \frac{7}{50} \tag{4}$$

$$= \frac{43}{50} \tag{5}$$