

Question 10.13.2.6

Probability and Random Processes

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Question 10.13.2.6:

A game consists of spinning an arrow which comes to rest pointing at one of the regions (1, 2 or 3) (Fig. 13.1). Are the outcomes 1, 2 and 3 equally likely to occur? Give reasons.

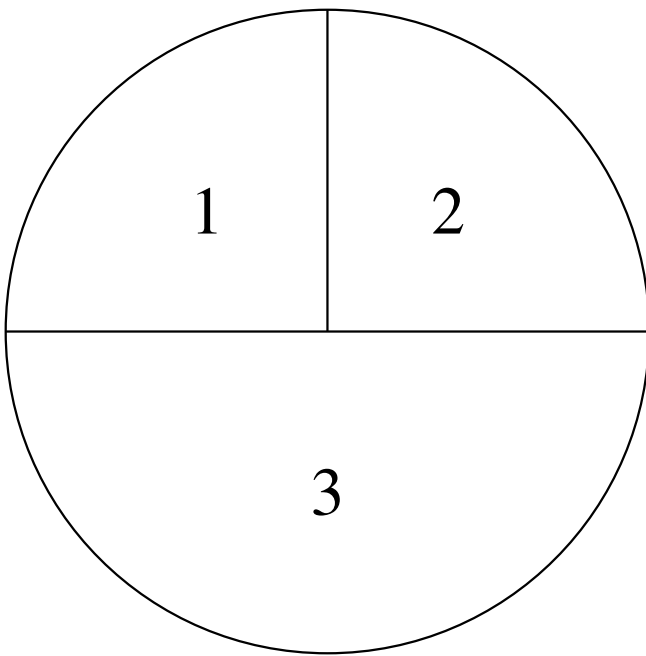


Fig. 0. Fig.13.1

Solution:

$$X \in \{1, 2, 3\}$$

From the figure given,

$$p_X(k) = \begin{cases} \frac{90^\circ}{360^\circ} = 0.25 & k = 1 \\ \frac{90^\circ}{360^\circ} = 0.25 & k = 2 \\ \frac{180^\circ}{360^\circ} = 0.5 & k = 3 \end{cases} \quad (1)$$

$p_X(k)$ are not equal for all k . Therefore, the events are not equally likely.