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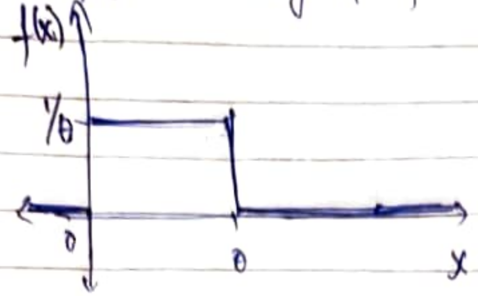
Given, a uniform distribution from 0 to θ.
p.d.f. $= 1/\theta$. Plotting p.d.f. vs X,



By the Law of Large Numbers, in a sample of N observations, the observations appear more and more in frequency indicated by p.d.f. as N approaches infinity.
As per Order Statistics,
Let $X_{(n-13)} \equiv y_n$, $y_n \in (0,\theta)$ for diff' n.
then, 13 observations were found in (y_n, θ).
$\because n \to \infty$, $\therefore$ the observations fit the probability curve.

$\therefore P(X > y) \times n = 13$

$$\Rightarrow \int_{y_n}^{\theta} x f(x)\, dx \times n = 13$$

$$\Rightarrow \int_{y_n}^{\theta} \frac{x}{\theta}\, dx \times n = 13 \Rightarrow \frac{y_n - \theta}{\theta} \times n = 13$$

$$\Rightarrow \frac{y_n - \theta}{\theta} = \frac{13\theta}{\theta n}$$

As $n \to \infty$, $\frac{13\theta}{n} \to 0$

$$\Rightarrow y_n - \theta \to 0$$

$$\Rightarrow y_n \xrightarrow[n \to \infty]{} \theta$$

$$\therefore X_{(n-13)} \xrightarrow[n \to \infty]{} \theta \quad \text{Ans}$$