GATE SMASHERS

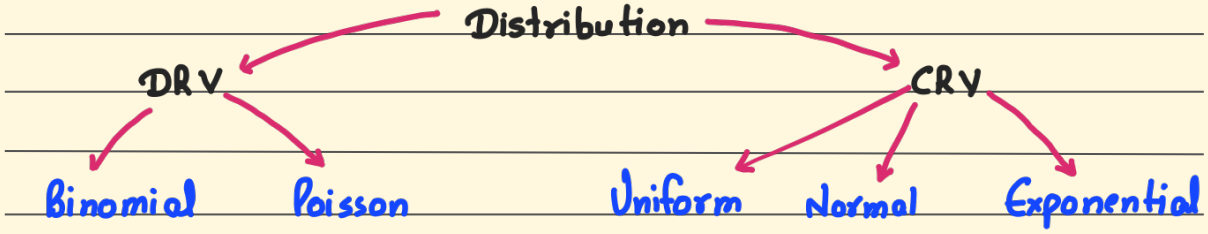
GATE2024 Engineering Mathematics

Topic: Probability and Statistics

Subtopic: .....Discrete....And....Continuous....Random....Variable

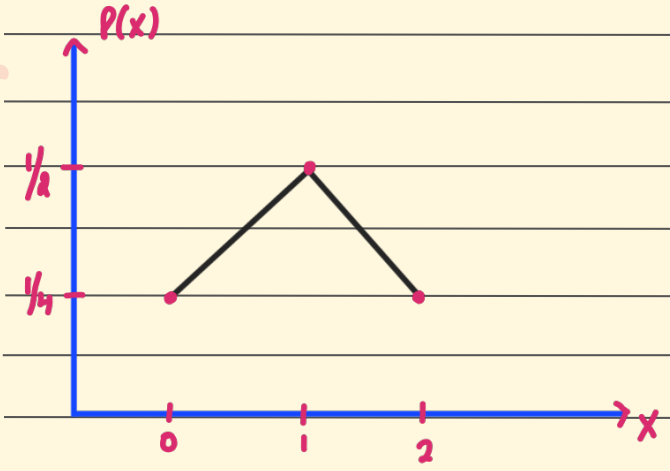
LECTURE -17

EXPLANATION



Discrete Random Variable

- Finite No. (Countable)
- For Mean ($E(x)$) → $\sum x_i p_i$
- Small sample space.
  eg- 2 Coins are tossed
- Integers ✓
- Spread is small

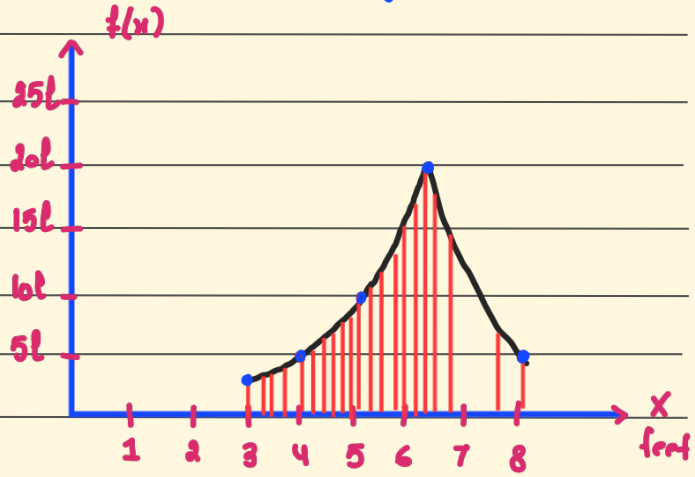


Two coins are tossed → x (Tail)

- $P(x) \geq 0 \rightarrow \sum P(x) = 1$

Continuous Random Variable

- Infinite (Non Countable)
- For Mean ($E(x)$) → $\int_{-\infty}^{\infty} x f(x)\,dx$
- Large sample space.
  eg- Weight of persons
- Decimal ✓
  Spread is large.



Weight of persons in Haryana

- $f(x) \geq 0$ $\int_{-\infty}^{\infty} f(x) = 1$

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