

EE 497B

**Probability and Random Processes
for Electrical Engineers**

Lecture 24

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Lecture 24 Topics

- Derived Random Variables
- Expected Value of a Derived Random Variable

Theorem 3.19

- If $Y = aX$, where $a > 0$, then
 - The CDF of Y is $F_Y(y) = F_X(y/a)$
 - The PDF of Y is $f_Y(y) = f_X(y/a) / a$
- Proof