INTERGÊNCIA ESTATÍSTICA

AULA 1

$$Pr(X \geq t) \leq \frac{E[X^n]}{t^n}$$

$$E[X^n] = \int_0^\infty x^n f(x)\, dx$$

$$= \int_0^\tau x^n f(x)\, dx + \int_t^\infty x^n f(x)\, dx$$

≥ 0

$$E[X^n] \geq \int_t^\infty x^n f(x)\, dx$$

(τ, ∞) $\quad t^n f(x) \leq x^n f(x)$

$$E[X^n] \geq \int_t^\infty t^n f(x)\,dx$$

$$\geq t^n \int_t^\infty f(x)\,dx$$

$$P_r(X \geq t)$$

$$E[X^n] \geq t^n P_r(X \geq t)$$

$$E[X^n] \overset{\text{def}}{=} \int_0^\infty x^n f(x)\,dx$$

$E[X^p]$ exists

$$\text{Var}(X) = E[X^2] - (E[X])^2$$

$E[X^2] \quad \forall x \leq p$

$$\sqrt{(X-\mu)^2} = |X-\mu|$$

$$\sqrt{(X-\mu)^2} \geq \sqrt{t^2}$$

$$|X-\mu| \geq t$$

$$Var(S_n) = \frac{n}{4}$$

$$t^2 = \left(\frac{n}{10}\right)^2$$

$$\frac{Var(S_n)}{t^2} = \frac{100}{n^2}$$

$$\frac{100}{n^2} \cdot \frac{n}{4} =$$