

$$E(x^2) = \int_{-\infty}^{+\infty} x^2 f_x(x) dx = \int_0^{+\infty} x^2 \cdot \lambda e^{-\lambda x} dx.$$

double ITP

$$\text{Var}X = E(x^2) - (E(x))^2 = \frac{1}{\lambda^2}$$

$$\left(\sigma_x = \frac{1}{\lambda} \right)$$