

$$\text{Var}(x) = \int_{-\infty}^{+\infty} t^2 \cdot f_x(t) dt - \mu^2$$

$$t^2 \cdot \left[ t + \frac{3t^2}{2} \right] =$$

$$\int_0^1 t^3 + \frac{3t^4}{2} = \left[ \frac{t^4}{4} + \frac{3t^5}{2 \cdot 5} \right]_0^1 = \frac{t^4}{4} + \frac{3t^5}{10} \Big|_0^1$$

$$\frac{1}{4} + \frac{3}{10} = \frac{10+12}{40} = \frac{22}{40}$$

$$\frac{22}{40} - \frac{289}{576} = \boxed{0,0482} \quad \checkmark$$