

Prove that the standard normal distribution (mean 0, standard deviation 1) has zero skew and kurtosis (4th moment divided by standard deviation to the 4th power) equal to 3.

$$\frac{1}{\sqrt{2\pi}} \int_{-\infty}^{\infty} t^3 \exp(-t^2 / 2) dt = 0; \quad \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{\infty} t^4 \exp(-t^2 / 2) dt = 3;$$