probability density function (PDF, f_X, f)
A function describing the relative *probability* of a *continuous random variable* X taking a specific value in its *sample space*. It is denoted by the symbol f_X (or just f, if X is implied), where X is the random variable X or the *probability distribution* of X. Each probability distribution has its own specific PDF.

Relative probability can only compare the likelihood of two points in the sample space of X. For example, the peak of the *standard normal distribution* Z at $x = 0$ would have a relative probability of $f_Z(0) = 0.4$. This does not say anything about the actual probability $P(Z = 0)$, though.

To compute the probability of a continuous random variable falling within a specific interval, the integral of the PDF is used. See *cumulative distribution function* (CDF). The equivalent function for *discrete* probability distributions is the *probability mass function* (PMF).