



Formula 1:

$$(1) \quad P(\Omega) = \int_{-\infty}^{+\infty} f(x) dx = 1$$

Formula 2:

$$(2) \quad E(X) := \int_{-\infty}^{+\infty} x f(x) dx$$

A third one, with references to 1 and 2:

$$\begin{aligned} E(aX + b) &= \int_{-\infty}^{+\infty} (ax - b) f(x) dx \\ (3) \quad &= a \int_{-\infty}^{+\infty} x f(x) dx + b \int_{-\infty}^{+\infty} f(x) dx \\ &= aE(X) + b \\ &\quad (1),(2) \end{aligned}$$

And another one:

$$(4) \quad V(X) = \frac{a^2 + b^2 + c^2 - ab - ac - bc}{18}$$