FUNCTION	NOTATION	EQUATION/CONDITIONS
CUMULATIVE DISTRIBUTION	$P(X \le x)$, $F(x)$	$0 \le F(x) \le 1$
PROBABILITY DENSITY	$f(x)$	$f(x) = \dfrac{dF(x)}{dx}$, $0 \le f(x)$, $\int_{x=-\infty}^{x=\infty} f(x)dx = 1$
MEAN OR EXPECTED VALUE	μ, $E(X)$	$\mu = \int_{x=-\infty}^{x=\infty} xf(x)dx$
VARIANCE	σ^2, $E([X-\mu]^2)$	$\sigma^2 = E(X^2) - \mu^2 = \int_{x=-\infty}^{x=\infty} (x-\mu)^2 f(x)dx$
EXPECTED VALUE OF FUNCTION	$\mu_{g(X)}$, $E(g(X))$	$\mu_{g(X)} = \int_{x=-\infty}^{x=\infty} g(x)f(x)dx$
STANDARD DEVIATION	σ, $\sqrt{E([X-\mu]^2)}$	$\sigma = \sqrt{\sigma^2}$
MARGINAL DENSITY	$g(x)$, $h(y)$	$g(x) = \int_{y=-\infty}^{y=\infty} f(x,y)dy$, $h(y) = \int_{x=-\infty}^{x=\infty} f(x,y)dx$
CONDITIONAL DENSITY	$f(x \mid y)$	$f(x \mid y) = \dfrac{f(x,y)}{h(y)}$
EXPECTED VALUE OF JOINT RV	μ_{XY}, $E(XY)$	$\mu_{XY} = \int_{x=-\infty}^{x=\infty} \int_{y=-\infty}^{y=\infty} xyf(x,y)\,dy\,dx$
COVARIANCE	σ_{XY}, $\mathrm{cov}(X,Y)$	$\mathrm{cov}(X,Y) = E(XY) - \mu_x \mu_Y$
CORRELATION COEFFICIENT	ρ_{XY}	$\rho_{XY} = \dfrac{\sigma_{XY}}{\sigma_X \sigma_Y}$