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