

1 List of Helpers

1.1 Relations

$X \backslash \text{Equidistributed } Y: X \stackrel{d}{=} Y$
 $X \backslash \text{ConvergesAlmostSurely } Y: X \xrightarrow{a.s.} Y$
 $X \backslash \text{ConvergesProbability } Y: X \xrightarrow{p} Y$
 $X \backslash \text{ConvergesRmean } Y: X \xrightarrow{r} Y$
 $X \backslash \text{ConvergesDistrubution } Y: X \xrightarrow{d} Y$
 $\backslash X \backslash \text{sim } \backslash \text{Normal}(0,1): X \sim \mathcal{N}(0,1)$

1.2 Sets

$\backslash \text{NN}: \mathbb{N}$
 $\backslash \text{ZZ}: \mathbb{Z}$
 $\backslash \text{RR}: \mathbb{R}$
 $\backslash \text{CC}: \mathbb{C}$
 $\backslash \text{HS}: \mathcal{H}$
 $\backslash \text{XS}: \mathcal{X}$
 $\backslash \text{ZS}: \mathcal{Z}$
 $\backslash \text{TS}: \mathcal{T}$
 $\backslash \text{Normal}: \mathcal{N}$

1.3 Operators

$\backslash \text{abs}\{X\}: |X|$
 $\backslash \text{argmax}\{X\}: \underset{X}{\operatorname{argmax}}$
 $\backslash \text{argmin}\{X\}: \underset{X}{\operatorname{argmin}}$
 $\backslash \text{prob}\{X\}: p(X)$
 $\backslash \text{cprob}\{X\}\{Y\}: p(X|Y)$
 $\backslash \text{ndist}\{\mu\}\{\sigma\}: \mathcal{N}(\mu, \sigma)$
 $\backslash \text{Ordo}\{n^k\}: \mathcal{O}(n^k)$
 $\backslash \text{interval}\{a\}\{b\}: [a, b]$
 $\backslash \text{Expected}[X]: \mathbb{E}[X]$
 $\backslash \text{Expected}\backslash \text{bigl}[\frac{X}{Y}\backslash \text{bigr}]: \mathbb{E}\left[\frac{X}{Y}\right]$
 $\backslash \text{Variance}(X): \operatorname{Var}(X)$
 $\backslash \text{CoVariance}(X,Y): \operatorname{Cov}(X,Y)$
 $\backslash \text{Correlation}(X,Y): \operatorname{Corr}(X,Y)$

1.4 Matrices

$\begin{vmatrix} 1 & 0 \\ 0 & 1 \end{vmatrix}$: $\begin{vmatrix} 1 & 0 \\ 0 & 1 \end{vmatrix}$
 $\begin{Vmatrix} 1 & 0 \\ 0 & 1 \end{Vmatrix}$: $\begin{Vmatrix} 1 & 0 \\ 0 & 1 \end{Vmatrix}$
 $\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$: $\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$
 $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$: $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$
 $\begin{Bmatrix} 1 & 0 \\ 0 & 1 \end{Bmatrix}$: $\begin{Bmatrix} 1 & 0 \\ 0 & 1 \end{Bmatrix}$
 $\begin{smallmatrix} 1 & 0 \\ 0 & 1 \end{smallmatrix}$: $\begin{smallmatrix} 1 & 0 \\ 0 & 1 \end{smallmatrix}$

1.5 Braces

$z = \overbrace{\underbrace{x}_{\text{real}} + \underbrace{iy}_{\text{imag}}}^{\text{complex}}: \dots = \underline{\text{answer}}$