Hello Wolrd!
$y = 2x - 1$
$y = 2x - 1$
$y = 2x - 1$

$$y = 2x - 1$$

$x^{2y}, x^{2y^x}, X_{n_1}^{2y^z}$

$X_{3m}^{2m}, X^2 n_3 m$

X_n^2, X_n^2, X_{n^2}

$2^{2^{2^{2^{2^{2^{2^{2}}}}}}}$

$f'(x) \quad f'''(x)|_{x=0}$

$\pi, \Phi, \Sigma, \mu, \alpha$

$\mathit{\Gamma\Pi\Phi}$는 $\Gamma\Pi\Phi$와 다르다.

... 는 $\Psi\Theta\Omega$와 다르다.

$\sqrt[n]{x}$, $\sqrt[3]{ax+b}$, $\sqrt[2]{5}$, $\sqrt{2}$, $\sqrt[x]{2}$

$$\sqrt{1+\sqrt{1+\sqrt{1+\sqrt{1+\sqrt{1+\sqrt{1+x}}}}}} \tag{1}$$

$$\sqrt{a}\sqrt{d}\sqrt{g}$$

$(x_1 + \cdots + x_n)$
$(a_1, \ldots, a_m)$
$(a_1, \vdots, a_n)$
$(a_1, \ddots, a_n)$

$\frac{x^2+1}{y_1^2-1}$
$1+\frac{1}{1+\frac{1}{1+\frac{1}{1+\frac{1}{1+\frac{1}{1+x}}}}}$
$\frac{1}{2}$ $\frac{x}{2}$
$\mathcal{A}\otimes$
$\mathcal{A}\trianglelefteq$
$\mathcal{S}$를 $\mathcal{S}=\{A \mid A \ni \mathcal{T}\}$라 하자.
$\not A, \emptyset$
$\not\ni, \not\subset, \not<$
$\lim_{n\to\infty}$

$\liminf_{n\longrightarrow\infty}$

$liminf_{n\longrightarrow\infty}$

$a \bmod b \qquad y \pmod{a+b}$
$\int\int\cdots\int f dP$
$\int\!\int\cdots\int f dP$
$\iint\cdots\int f dP$
$1/\log n$
$\sqrt{4}\, n$

$$f(x;\mu,\sigma)=\frac{1}{\sqrt{2\pi}\sigma}\exp\left\{-\frac{(x-\mu)^2}{2\sigma^2}\right\}$$

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$$\sum_{i=1}^n x_i = \int_0^1 f$$

$\sum_{i=1}^n x_i = \int_0^1 f$
$\dfrac{a-b}{c+d}$
$\frac{a-b}{c+d}$

$$\vec{x}+\vec{y}=\left\{\begin{array}{l} a \\ b \end{array}\right.$$

$$\mathbf{A} = \left(\begin{array}{ccc} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{array} \right)$$

$$\widehat{a-1} = \widetilde{x-y} + \widehat{\mathrm{Cov}}$$

$$\begin{array}{lrr} a & b & c \\ a-b & b-c & c-a \\ x^2+2x+1 & x^2+2x+1 & x^2+2x+1 \end{array}$$

$$\begin{array}{c} a_{11}x_1 + a_{12}x_2 + \cdots + a_{1n}x_n = b_1 \\ a_{11}x_1 + a_{12}x_2 + \cdots + a_{1n}x_n = b_1 \\ \vdots \\ a_{11}x_1 + a_{12}x_2 + \cdots + a_{1n}x_n = b_1 \end{array} \tag{2}$$

$$\left(\begin{array}{c} \left| \begin{array}{cc} a & b \\ c & d \end{array} \right| \\ e \\ f \end{array} \right)$$

$$x^n = \overbrace{x \times x \times \cdots \times x}$$

$$\overbrace{a + \underbrace{b + \overline{c + d}}\, + e}$$

$$\overbrace{a + \underbrace{b + c}_{123} + e}^{ab}$$

$$\frac{p(x_i|\mathbf{x}_{-i})}{1 - p(x_i|\mathbf{x}_{-i})} = \theta_1 \sum_{i=1}^{m} x_i + \beta_1 \sum_{\mathrm{nbr}} x_i x_{i'} \tag{3}$$

$$\frac{p(x_i|\boldsymbol{x}_{-i})}{1 - p(x_i|\boldsymbol{x}_{-i})} = \theta_1 \sum_{i=1}^{m} x_i + \beta_1 \sum_{\mathrm{nbr}} x_i x_{i'} \tag{4}$$

Test the above equation label in here (3).

$$\begin{aligned} (x+y)^2 &= x^2 + xy + yx + y^2 \qquad (5) \\ &= x^2 + xy + xy + y^2 \\ &= x^2 + 2xy + y^2 \qquad (6) \end{aligned}$$

$$
\begin{aligned}
(x+y)^2 &= x^2+xy+yx+y^2 \\
&= x^2+2xy+y^2
\end{aligned} \tag{7}
$$

$$
\begin{aligned}
(x+y)^2 &= x^2+xy+yx+y^2 \\
&= x^2+2xy+y^2
\end{aligned}
$$

$$
\begin{aligned}
&a+b+c+d+e+f+g+h+i+j+k+l= \\
&\quad x+y+z+a+b+c+d+e+f+g+o+s+t+ \\
&\quad u+v+w
\end{aligned}
$$

Math italic $different$ is from *different*.

$$
f(x)=\begin{cases} x & if x > 2 or if x < -2 \\ x & \mathrm{if} x > 2 \mathrm{orif} x < -2 \\ x & \text{if} x > 2 \text{ or if } x < -2 \end{cases} \tag{8}
$$

Form $\mathrm{e}^{\mathrm{pdf}}+\phi(\mathrm{x})$

Form $e^{pdf}+\phi(x)$

`Form` $\mathtt{e}^{\mathtt{pdf}}+\phi(\mathtt{x})$

Form $\mathbf{e}^{\mathbf{pdf}}+\phi(\mathbf{x})$

Form $\mathsf{e}^{\mathsf{pdf}}+\phi(\mathsf{x})$

$\mathcal{ABC}$

$\mathbf{a}=(a_1,a_2,\ldots,a_n)^T$

$\boldsymbol{a=(a_1,a_2,\ldots,a_n)^T}$

$\boldsymbol{a}\!=(a_1,a_2,\ldots,a_n)^T$

$\boldsymbol{a} = (a_1, a_2, \ldots, a_n)^T$

$\boldsymbol{aX + \beta + \gamma}$

$\boldsymbol{a}\boldsymbol{X} + \boldsymbol{\beta} + \boldsymbol{\gamma}$

$A \xrightarrow{f} B \xrightarrow{g} C$

$AAAAA$

$\dfrac{a+b}{c-d}$

$\frac{a+b}{a+b}$

$1 + \dfrac{1}{1 + \frac{1}{1+\frac{1}{1+\frac{1}{1+\frac{1}{1+x}}}}}$

$1 + \dfrac{1}{1+\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{1++\cfrac{1}{1+x}}}}}$

$$\text{표준편차} = \sqrt{\text{분산}} = \sqrt{\frac{\text{편차}^2\text{의 합}}{\text{표본의 개수} - 1}} \tag{9}$$

$\int_0^\infty f(x)dx$

$\int\limits_0^\infty f(x)dx$

$\displaystyle\int\limits_0^\infty f(x)dx$

$\int_0^\infty f(x)dx$

$\displaystyle\int_0^\infty f(x)dx$

$\inf\sup_{n\to\infty} f_n(x)$

$\inf_{n\to\infty}\sup f_n(x)$

$\inf\limits_{n\to\infty}^{\text{woops}}\sup f_n(x)$

$\inf\sup_{n\to\infty}^{\text{woops}} f_n(x)$

$\binom{2n}{n}$, ${}_{2n}\mathrm{C_n}$

$\begin{pmatrix} 2n \\ n \end{pmatrix}$

$\binom{2n}{n}$

$\genfrac{[}{]}{0pt}{}{x}{2y}$

$\genfrac{\{}{\}}{0pt}{}{a-c}{b}$

${}^{231}_{73}\mathrm{U}$

${}^{231}_{\ 73}\mathrm{U}$

$x + \genfrac{\langle}{\rangle}{0pt}{}{a+b}{c}$

$x + \genfrac{\uparrow}{\downarrow}{0pt}{}{a+b}{c}$

$A = \begin{pmatrix} \lambda & l \\ a & \alpha \end{pmatrix}$

$B = \left(\begin{array}{cc} \lambda & 1 \\ a & \alpha \end{array} \right)$

$$A = \begin{array}{c} \\ m_1 \\ m_2 \end{array} \begin{array}{c} \begin{array}{ccc} n_1 & n_2 & n_3 \end{array} \\ \begin{pmatrix} A_{11} & A_{12} & A_{13} \\ A_{21} & A_{22} & A_{23} \end{pmatrix} \end{array}$$

$$A = \quad \begin{array}{c} \\ m_1 \\ m_2 \end{array} \quad \begin{array}{ccc} n_1 & n_2 & n_3 \\ \left(A_{11} \right. & A_{12} & \left. A_{13} \right) \\ A_{21} & A_{22} & A_{23} \end{array}$$

$$f(x) = \begin{cases} x & \text{for } x > 0 \\ -x & \text{for } -1 < x \leq 0 \\ x^2 & \text{otherwise} \end{cases}$$

$$f(x) = \left\{ \begin{array}{rl} x & \text{for } x > 0 \\ -x & \text{for } -1 < x \leq 0 \\ x^2 & \text{otherwise} \end{array} \right.$$

$\frac{a+b}{c+d}$ $\frac{a+b}{c+d}$

$\{x \Big| x \in X\}$

$\{x \;\Big|\; x \in X\}$

$\{x \Big| x \in X\}$

$\{x \Big| x \in X\}$

$\Bigg\{ \bigg\{ \Big\{ \{\} \Big\} \bigg\} \Bigg\}$

$|b = |x + y||$

$\Big| b - |x + y| \Big|$

$$\frac{1}{\sqrt{2\pi}\sigma} \exp\{-\frac{(x-\mu)^2}{2\sigma^2}\} \text{ if } \mu = 0, \sigma = 1, \tag{10a}$$

$$\frac{1}{\sqrt{2\pi}\sigma} \exp\{-\frac{x^x}{2\sigma^2}\} \text{ if } \mu = 0, \tag{10b}$$

$$\frac{1}{\sqrt{2\pi}} \exp\{-\frac{x^2}{2}\} \text{ if } \mu = 0, \sigma = 1. \tag{10c}$$

식 (10b)와 식 (10c)는 식 (10a)의 특별한 경우이다.
$\mathbb{ABCDER}$

$\mathfrak{MathfrackFont}$

$\circledR\checkmark\maltese$

$\digamma\varkappa\beth\daleth\gimel$

$\ulcorner\urcorner\llcorner\lrcorner$

$$\sum_{\substack{i=j\\ i<k\\ j\neq k}} x_{ij}^{j-k}$$

$$\iiint\limits_{\substack{x\in A\\ y\in B\\ c\ni z}} f(x,y,z)dxdydz$$

$$\overset{\textstyle\sum^{m-n}\!\!\overset{n}{}}{\sum}\; x_{ij}$$

$$\begin{multline}
a = d + e + f + g + h + i + j + k + l + m \\
+ q + r + s + t + u + v + w + x + y + x + z \\
+ q + r + s + t + u + v + w + x + y + x + z \\
= e + f + g + h + i + j + k + l + m + z + y + x + m_2
\end{multline} \tag{11}$$

$$\begin{aligned}
a &= b + c + d + e \\
&- f + g + m \\
&= x^2 + y^2 + z
\end{aligned} \tag{12}$$

$$(x+y)^2 = x^2 + 2xy + y^2 \tag{13}$$

$$(x+y+z)^2 = x^2 + y^2 + z^2 + 2xy + 2yz + 2zx \tag{14}$$

$$(x+y)^2 = x^2 + 2xy + y^2 \tag{15}$$

$$(x+y+z)^2 = x^2 + y^2 + z^2 + 2xy + 2yz + 2zx \tag{16}$$

$$a_{11} = a_{12} \qquad a_{13} = a_{14} \tag{17}$$
$$(x+y)^2 = (x+y)(x+y)x^2 + 2xy + y^2 = z^2 \tag{18}$$
$$f(x) = \frac{1}{(1+x^2)} \qquad g(x) = \sqrt{2\pi} \tag{19}$$

$$\begin{aligned} a &= \alpha \\ b &= \beta\beta \\ c &= \gamma\gamma\gamma \end{aligned} \qquad \text{versus} \qquad \begin{aligned} D &= \Delta\Delta\Delta \\ e &= \epsilon\epsilon \\ Z &= \Omega \end{aligned} \tag{20}$$

$$\begin{gathered} a = \alpha \\ b = \beta\beta \\ c = \gamma\gamma\gamma \end{gathered} \qquad \text{versus} \qquad \begin{gathered} D = \Delta\Delta\Delta \\ e = \epsilon\epsilon \\ Z = \Omega \end{gathered} \tag{21}$$

$$\begin{aligned} f(x) &= \mathcal{F}(x) g(x) = \mathcal{G}(x) \\ f(x) &= \mathfrak{F}(x)\; g(x) = \mathfrak{G}(x) \end{aligned} \qquad \text{where} \qquad \begin{aligned} \mathfrak{F} &= \mathbb{F} \\ \mathfrak{G} &= \mathbb{G} \end{aligned} \tag{22}$$

$$f(x) = \mathcal{F}(x) \qquad g(x) = \mathcal{G}(x) \qquad \mathcal{G} = \mathbb{G} \tag{23}$$
$$f(x) = \mathfrak{F}(x) \qquad g(x) = \mathfrak{G}(x) \qquad \mathcal{F} = \mathbb{F} \tag{24}$$

$$\begin{aligned} f(x) &= \mathcal{F}(x) & g(x) &= \mathcal{G}(x) & \mathcal{G} &= \mathbb{G} \\ f(x) &= \mathfrak{F}(x) & g(x) &= \mathfrak{G}(x) & \mathcal{F} &= \mathbb{F} \end{aligned}$$

$$P_{i-j} = \begin{cases} 0 & \text{if } r-j \text{ is odd} \\ r!(-1)^{i-j} & \text{if } r-j \text{ is even} \end{cases} \tag{25}$$

$$a_1 = a_0 + d \tag{26}$$
$$a_2 = a_1 + d = a_0 + 2d \tag{27}$$

in general

$$a_n = a_{n-1} + d = a_0 + nd \tag{28}$$

$$
\begin{aligned}
a_1 &= a_0 + d \quad (29a)\\
a_n &= a_{n-1} + d \quad (29b)
\end{aligned}
$$

$$
\begin{aligned}
A_1, A_2, \ldots, &\qquad A_1, A_2, \ldots, \quad (30a)\\
A_1 + A_2 + \cdots, &\qquad A_1 + A_2 + \cdots, \quad (30b)\\
\text{곱하기} A_1 A_2 \cdots, &\qquad A_1, A_2 \cdots, \quad (30c)\\
\int_{A_1}\int_{A_2}\cdots &\qquad \int_{A_1}\int_{A_2}\cdots \quad (30d)
\end{aligned}
$$

"다음의 행렬 $\left[\begin{smallmatrix} a & b \\ c & d \end{smallmatrix}\right]$ 은 문장 내에서 쓴 작은 행렬이다."

$$
\begin{matrix} a_{11} & a_{12} & a_{13} \\ a_{21} & \multicolumn{2}{c}{\dotfill} \end{matrix}
$$

$$
\boldsymbol{A} = \begin{pmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{pmatrix}
$$

$$
\boldsymbol{A} = \begin{bmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{bmatrix}
$$

$$
\boldsymbol{A} = \begin{vmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{vmatrix}
$$

$$
\boldsymbol{A} = \begin{Vmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{Vmatrix}
$$

$$
\begin{pmatrix} D_1 t & -a_{12} t_2 & \ldots & -a_{1n} t_n \\ -a_{21} t_1 & D_2 t & \ldots & -a_{2n} t_n \\ -a_{31} t_1 & \multicolumn{3}{c}{\dotfill} \\ -a_{n1} t_1 & -a_{n2} t_2 & \ldots & D_n t \end{pmatrix}
$$

$$
\overleftarrow{a} \quad \overrightarrow{a} \quad \overleftrightarrow{a} \quad \underleftarrow{a}\underrightarrow{a} \quad \underleftrightarrow{a}
$$

$$
\ddot{a} \quad \dddot{a} \quad \ddddot{a}
$$

$$A \xleftarrow[\mu]{n\to\infty} B \xrightarrow[\sigma]{n\to-\infty} C \xrightarrow[\delta]{} D$$

$$\sqrt[\beta]{x}\,\sqrt[\beta]{x}$$

$$\boxed{\eta \leq N(\mu,\sigma^2) + O_p(n)}$$

$$\frac{a+b}{c-d} \qquad \binom{n}{x}$$

$$\dfrac{a+b}{c-d} \qquad \dbinom{n}{x}$$

$$\tfrac{a+b}{c-d} \qquad \tbinom{n}{x}$$

$$\cfrac{2}{\sqrt{2}+\cfrac{1}{\sqrt{2}+\cfrac{1}{\sqrt{2}+\cfrac{1}{\sqrt{2}+\cdots}}}}$$

$$\overset{*}{X}\underset{*}{X}$$

$$\sideset{_a^b}{_c^d}\sum$$

$$\sideset{^b}{}\sum \int_c$$

$$\gcd(n, m \bmod n)$$

$$x = y \pmod{b}$$

$$x = y \mod c$$

$$x = y \pod{d}$$

$$\int f d\mu \quad \iint f d\mu \quad \iiint f d\mu \quad \iiiint f d\mu \quad \idotsint f d\mu$$

$$\sqrt{a} + \sqrt{y} + \sqrt{d} \qquad \sqrt{a} + \sqrt{y} + \sqrt{d}$$

$a, b, c, d, ..., z; A, B, C, D, ..., Z$
a, b, c, d, ..., z; A, B, C, D, ..., Z
$\nVdash, \mathbb{A}, \mathbb{B}, \mathbb{C}, \mathbb{D}, \mathbb{E}, ..., \mathbb{X}, \mathbb{Y}, \mathbb{Z}$
$\mathcal{A}, \mathcal{B}, \mathcal{C}, \mathcal{D}, \mathcal{E}, ... \mathcal{X}, \mathcal{Y}, \mathcal{Z}$