Mathtype with Latex math symbols:

1. install Mathtype for win/mac (only now support mac office 2011, not support 2016!!!)
2. Use **$...$** or **\[ … \]** to embed math symbols, then option+\ or meta+\(win) to toggle it into math symbols.
3. Only support default math package, no additional package
4. Examples below are from wiki page examples: https://en.wikibooks.org/wiki/LaTeX/Mathematics

**Notes: If you math formula has errors, there will no ‘redo’ function works that means you cannot get the wrong formula back to revise. If you are not sure about the math, please make a copy before applying ‘option + \’.**

# Symbols

$**\forall** x **\in** X, **\quad** **\exists** y **\leq** **\epsilon**$



# Greek letters

$**\alpha**, **\Alpha**, **\beta**, **\Beta**, **\gamma**, **\Gamma**, **\pi**, **\Pi**, **\phi**, **\varphi**, **\Phi**$



# Operators

$**\cos** (2**\theta**) = **\cos**^2 **\theta** - **\sin**^2 **\theta**$



$**\lim**\_{x **\to** **\infty**} **\exp**(-x) = 0$



$a **\bmod** b$



# Powers and Indices

$ k\_{n+1} = n^2 + k\_n^2 - k\_{n-1}$



$n^{22}$



$f(n) = n^5 + 4n^2 + 2 {{!}}\_{n=17}$



# Fractions and Binomials

$ \frac{n!}{k!(n-k)!} = \binom{n}{k}$



$\frac{\frac{1}{x}+\frac{1}{y}}{y-z}$



${n! \over k!(n-k)!} = {n \choose k}$

$^3/\_7$ ${{}^{3}\!/\_{7}}$

 

$\newcommand\*\rfrac[2]{{}^{#1}\!/\_{#2}}

\rfrac{3}{7}$



Take ${}^1/\_2$ cup of sugar, \dots

 $3\times{}^1/\_2=1{}^1/\_2$

Take  cup of sugar, \dots



$x^\frac{1}{2}$



# Continued fractions

$ x = a\_0 + \cfrac{1}{a\_1

 + \cfrac{1}{a\_2

 + \cfrac{1}{a\_3 + \cfrac{1}{a\_4}}}}$



# Multiplication of two numbers

\[ \begin{equation}

\frac{

 \begin{array}[b]{r}

 \left( x\_1 x\_2 \right)\\

 \times \left( x'\_1 x'\_2 \right)

 \end{array}

 }{

 \left( y\_1y\_2y\_3y\_4 \right)

 }

\end{equation} \]

 

# Roots

\sqrt{\frac{a}{b}}



\sqrt[n]{1+x+x^2+x^3+\ldots}



$\usepackage{letltxmacro}

\makeatletter

\let\oldr@@t\r@@t

\def\r@@t#1#2{%

\setbox0=\hbox{$\oldr@@t#1{#2\,}$}\dimen0=\ht0

\advance\dimen0-0.2\ht0

\setbox2=\hbox{\vrule height\ht0 depth -\dimen0}%

{\box0\lower0.4pt\box2}<!---->}

\LetLtxMacro{\oldsqrt}{\sqrt}

\renewcommand\*{\sqrt}[2][\ ]{\oldsqrt[#1]{#2} <!---->}

\makeatother

\sqrt[a]{b} \quad \oldsqrt[a]{b}$

**Cannot convert self-defined formular**

$\usepackage{letltxmacro}

\makeatletter

\let\oldr@@t\r@@t

\def\r@@t#1#2{%

\setbox0=\hbox{$\oldr@@t#1{#2\,}**Error! Not a valid embedded object.**

# Sums and integrals

\textstyle\sum\_{i=1}^{10} t\_i or \displaystyle\sum\_{i=1}^{10} t\_i

 or 

\int\_0^\infty \mathrm{e}^{-x}\,\mathrm{d}x

# Brackets, braces and delimiters

( a ), [ b ], \{ c \}, | d |, \| e \|, \langle f \rangle, \lfloor g \rfloor, \lceil h \rceil, \ulcorner i \urcorner



# Automatic sizing

\left(\frac{x^2}{y^3}\right)

$P\left(A=2\middle{{!}}\frac{A^2}{B}>4\right)$



\left\{\frac{x^2}{y^3}\right\}



\left.\frac{x^3}{3}\right|\_0^1



# Manual sizing

( \big( \Big( \bigg( \Bigg(

\frac{\mathrm d}{\mathrm d x} \left( k g(x) \right)



\frac{\mathrm d}{\mathrm d x} \big( k g(x) \big)



# Typesetting intervals

x \in [-1,1]

# Matrices and arrays

\begin{matrix}

 a & b & c \\

 d & e & f \\

 g & h & i

 \end{matrix}

\begin{matrix}

 -1 & 3 \\

 2 & -4

 \end{matrix}



\[

A\_{m,n} =

 \begin{pmatrix}

 a\_{1,1} & a\_{1,2} & \cdots & a\_{1,n} \\

 a\_{2,1} & a\_{2,2} & \cdots & a\_{2,n} \\

 \vdots & \vdots & \ddots & \vdots \\

 a\_{m,1} & a\_{m,2} & \cdots & a\_{m,n}

 \end{pmatrix} \]

 

\[ \begin{array}{c{{!}}c}

 1 & 2 \\

 \hline

 3 & 4

 \end{array} \]

 

$M = \begin{bmatrix}

 \frac{5}{6} & \frac{1}{6} & 0\\

 \frac{5}{6} & 0 & \frac{1}{6}\\

 0 & \frac{5}{6} & \frac{1}{6}

 \end{bmatrix}$



# Matrices in running text

A matrix in text must be set smaller:$\bigl(\begin{smallmatrix}

a&b \\

c&d

\end{smallmatrix} \bigr)$

A matrix in text must be set smaller:

# Adding text to equations

 50 apples \times 100 apples = lots of apples^2



# Accent

$\hat{a} ,\acute{a} ,\bar{a} ,\dot{a} ,\breve{a}$



$\check{a} ,\grave{a} ,\vec{a} ,\ddot{a} ,\tilde{a}$

