

L^AT_EX L^AT_EX_Learn_03_formula

running Turtle

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1 数学模式与公式引用

1.1 常用公式

勾股定理 $a^2+b^c=c^2$
求和公式 $1+2+\cdots+n=\sum_i i=\frac{n*(n+1)}{2}$

这是行间公式 \sum

Formula 1 : $E=mc^2$ (1)

Formula 2 : $G=mg$ (2)

$\frac{23}{45} \, 4\frac{2}{3} \, \frac{x+y}{x-y} \, \frac{\frac{x+y}{x-y}}{x^2+y^2} \, \sqrt[n]{\frac{x^2+\sqrt{2}}{x+y}} \, A_n^m \, A_{ij} \, f(x) = e^{x^2+x+3} \, 45^\circ \, (e^x)'' = (e^x)' = e^x$

$\vec{a} \cdot \vec{b} \quad \boldsymbol{a} \times \boldsymbol{b} \quad \overrightarrow{AB} \times \overrightarrow{CD} \quad \overline{AB} \quad \underline{CD} \quad \bar{x} \quad \bar{x}_0 \quad \hat{a} \quad \overbrace{(a+a+\cdots+a)}^{n \text{ 个 } a} \times \underbrace{(b+b+\cdots+b)}_{m \text{ 个 } b}$

1.2 积分

$\lim_{x \rightarrow 0} \frac{\sin x}{x} = 1$

$$\lim_{n \rightarrow \infty} (1 + \frac{1}{n})^n = e$$

$$\int x\mathrm{d}x=\frac{1}{2}x^2+C$$

$$\int_0^1\sqrt{1-x^2}\mathrm{d}x$$

$$\int\int_S\sqrt{x^2+y^2}\mathrm{d}x\mathrm{d}y$$

$$\oint_{\Gamma}P(x,y,z)\mathrm{d}x+Q(x,y,z)\mathrm{d}y+R(x,y,z)\mathrm{d}z$$

$$\oint_L P\mathrm{d}x+Q\mathrm{d}y=\int\int_D(\frac{\partial Q}{\partial x}-\frac{\partial P}{\partial y})\mathrm{d}x\mathrm{d}y$$

1.3 矩阵

$$A=\left(\begin{array}{cc}1&2\\3&4\end{array}\right)$$

$$M=\left(\begin{array}{ccccc}a_{11}&a_{12}&a_{13}&\cdots&a_{1n}\\a_{21}&a_{22}&a_{23}&\cdots&a_{2n}\\\vdots&\vdots&\vdots&\ddots&\vdots\\a_{n1}&a_{n2}&a_{n3}&\cdots&a_{nn}\end{array}\right)$$

1.4 多行公式

$$\begin{aligned}(a+b)^3&=(a+b)^2(a+b)\\&=(a^2+2ab+b^2)(a+b)\\&=a^3+3a^2b+3ab^2+b^3\end{aligned}$$

$$\left\{\begin{array}{lcl}x+y+z&=&10\\x-y-z&=&-5\\2x+3y+4z&=&35\end{array}\right.$$

1.5 分支公式

$$f(x) = \begin{cases} 1, & x \text{ 为有理数} \\ 0, & x \text{ 为无理数} \end{cases}$$

$$g(x) = \begin{cases} \frac{1}{2}x^2, & x \leq 0 \\ \frac{1}{3}\ln x, & 0 < x < 10 \\ \frac{1}{10}\sqrt{x}, & x \geq 10 \end{cases}$$

$$\left. \begin{array}{l} S \subset T \\ S \supset T \end{array} \right\} \Rightarrow S = T$$

2 定理环境

定义 1 垃圾桶里不能有垃圾

定义 2 衣架上不准晾衣服

定义 3 宿舍不准睡觉