

SEBASTIAN'S MATH TEST

The default math mode font is *Math Italic*. This should not be confused with ordinary *Text Italic* – notice the different spacing! `\mathbf` produces bold roman letters: **abcABC**. If you wish to embolden complete formulas, use the `\boldmath` command *before* going into math mode. This changes the default math fonts to bold.

`normal` $x = 2\pi \Rightarrow x \simeq 6.28$

`mathbf` $\mathbf{x} = 2\pi \Rightarrow \mathbf{x} \simeq 6.28$

`boldmath` $x = \mathbf{2}\pi \Rightarrow x \simeq \mathbf{6.28}$

Greek is available in upper and lower case: $\alpha, \beta \dots \Omega$, and there are special symbols such as \hbar . The following letters should be upright: $\Gamma, \Delta \dots \Omega$. Digits in formulas 1, 2, 3 ... may differ from those in text: 4, 5, 6...

There is a calligraphic alphabet `\mathcal` for upper case letters *ABCDEF*..., and there are letters for number sets: $\mathbb{A} \dots \mathbb{Z}$, which are produced using `\mathbb`.

$$\sigma(t) = \frac{1}{\sqrt{2\pi}} \int_0^t e^{-x^2/2} dx \quad (1)$$

$$\prod_{j \geq 0} \left(\sum_{k \geq 0} a_{jk} z^k \right) = \sum_{k \geq 0} z^n \left(\sum_{\substack{k_0, k_1, \dots \geq 0 \\ k_0 + k_1 + \dots = n}} a_0 k_0 a_{1k_1} \dots \right) \quad (2)$$

$$\pi(n) = \sum_{m=2}^n \left[\left(\sum_{k=1}^{m-1} \lfloor (m/k) / \lceil m/k \rceil \rfloor \right)^{-1} \right] \quad (3)$$

$$\underbrace{\overbrace{\{a, \dots, a\}}^{k \text{ } a' \text{ } s} , \overbrace{\{b, \dots, b\}}^{l \text{ } b' \text{ } s}}_{k+l \text{ elements}} \quad (4)$$

$$\begin{array}{c} \nearrow \mu^+ + \nu_\mu \\ \mathrm{W}^+ \rightarrow \pi^+ + \pi^0 \\ \rightarrow \kappa^+ + \pi^0 \\ \searrow \mathrm{e}^+ + \nu_\mathrm{e} \end{array}$$

$$\pm \frac{\left| \begin{array}{ccc} x_1 - x_2 & y_1 - y_2 & z_1 - z_2 \\ l_1 & m_1 & n_1 \\ l_2 & m_2 & n_2 \end{array} \right|}{\sqrt{\left| \begin{array}{cc} l_1 & m_1 \\ l_2 & m_2 \end{array} \right|^2 + \left| \begin{array}{cc} m_1 & n_1 \\ n_1 & l_1 \end{array} \right|^2 + \left| \begin{array}{cc} m_2 & n_2 \\ n_2 & l_2 \end{array} \right|^2}}$$

Mathematical accents:

acute= \acute{a} grave= \grave{a} ddot= \ddot{a} tilde= \tilde{a} bar= \bar{a} breve= \breve{a} check= \check{a} hat= \hat{a} vec= \vec{a} dot= \dot{a}