# $\mathcal{UNIVERSITY\ OF\ THE\ AEGEAN}$

Compare $\boldsymbol{\sqrt{x^2 + y^2} = 0}$ with $\sqrt{x^2 + y^2} = 0$.

```
\mathversion{bold}
Compare $\sqrt{x^2 + y^2}=0$
\mathversion{normal} with  $\sqrt{x^2 + y^2}=0$.
```

Binary relations

$\cap$ `\cap` $\cup$ `\cup` $\times$ `\times`
$\pm$ $\mp$ $\otimes$ $\oplus$ $\uplus$ $\wr$ $*$ $\star$ et.c.

Common symbols

$\leq$ `\leq` $\geq$ `\geq` $\in$ `\in` $\subset$ `\subset` $\supset$ `\supset`
$\equiv$ $\subseteq$ $\supseteq$ $\parallel$ $\neq$ $\sim\ni$ et.c.

Arrows

$\leftarrow$ `\leftarrow` $\rightarrow$ `\rightarrow` $\mapsto$ `\mapsto` $\Leftrightarrow$ `\Leftrightarrow`
$\hookrightarrow$ $\uparrow$ $\downarrow$ $\rightharpoonup$ $\searrow$ et.c.

Other symbols

$\ldots$ `\ldots` $\cdots$ `\cdots` $\vdots$ `\vdots` $\ddots$ `\ddots`
$\partial$ `\partial` $\nabla$ `\nabla` $\forall$ `\forall` $\emptyset$ `\emptyset` $\exists$ `\exists` $\infty$ `\infty` et.c.

Variable size symbols

$\sum$ `\sum` $\prod$ `\prod` $\int$ `\int` $\oint$ `\oint` $\bigcup$ `\bigcup` $\bigcap$ `\bigcap`
$\coprod$ $\bigwedge$ $\bigoplus$ et.c.

Functions

$\lim, \cos, \sin, \log, \sup, \inf, \min, \max$ et.c.

Math spacing

| | |
|---|---|
| $x \qquad x$ | `$x \qquad x$` |
| $x \quad x$ | `$x \quad x$` |
| $x \; x$ | `$x \; x$` |
| $x \: x$ | `$x \: x$` |
| $x \, x$ | `$x \, x$` |
| $x x$ | `$x x$` |
| $x \! x$ | `$x \! x$` |

Variable size symbols No2

$\{$ `\{` $\}$ `\}` $\langle$ `\langle` $\rangle$ `\rangle` ( ) [ ] $\|$ `\Vert` et.c.

*Forcing other sizes*

$\Biggl( \biggl( \Bigl( \bigl( \bigr) \Bigr) \biggr) \Biggr)$ was created with

`$\Biggl( \biggl( \Bigl( \bigl(  \bigr) \Bigr) \biggr) \Biggr)$`

$3 \Biggm/ 4 \biggm/ 5 \Bigm/ 6 \bigm/ 7$ was created with

`$3 \Biggm/4 \biggm/ 5 \Bigm/ 6 \bigm/ 7 $`

# Exercises

$$\nabla^2 = \frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2} + \frac{\partial^2}{\partial z^2}$$

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

$$\sqrt{abc} \qquad \sqrt[n]{abc}$$

$$f(x) \stackrel{def}{=} \int_0^\pi \sin(xt)dt$$

$$\sum_{\substack{n\in A\\ m\in B\\ k\in C}} a_{nmk}$$

$$\overline{\overline{x}^2} \qquad \underline{\underline{x} + \underline{y}}$$

$$\overbrace{a,\ldots,z}^{\text{26 letters}} \qquad \underbrace{a,\ldots,z}_{\text{26 letters}}$$

$$\binom{p}{2} x^2 y^{p-2} - \frac{1}{1-x}\frac{1}{1-x^2}$$

$$\sqrt[3]{1+\sqrt[4]{1+\sqrt[5]{1+\sqrt[6]{1+\sqrt[7]{1+x}}}}}$$

$$S \subseteq \Sigma \Rightarrow S \in S'$$

$$(T\mathbf{y}, \mathbf{z})\langle \sum_{i=1}^{n} y_i \sum_{k=1}^{n} \mathbf{t}_{i,k}\mathbf{x}_k, \sum_{j=1}^{n} z_j \mathbf{x}_j \rangle$$

$$\int_a^b K(x,y)p(y)dy = \sum_{i,j=1}^{n} c_{i,j} \int_a^b h_j(y)p(y)dy h_i(x)$$

$$G_3(x) = \frac{F_3(x)}{\|F_3(x)\|} = \frac{1}{\sqrt{2\pi}}$$

$$\int_{-T}^{T} \int_0^{T-|u|} \Big\{ p_N \delta(u) + q_{NN}(u) \Big\} e^{-i\lambda u} du dv$$

$$\left[ \left( \frac{\int_1^\infty f(x)dx}{\int_1^\infty g(y)dy} \right)^2 + 1 \right]^2 + 1$$

$$\lim_{n \to \infty} \left\{ \int_D \left[ \langle G(P,Q) \rangle - \left| \left\lfloor \sum_{n=1}^{m} \frac{u_n(P)}{\lambda_n} \right\rfloor \right|^2 \right] dr_q = 0 \right\} + 1 = 0$$

$$\begin{bmatrix} a_{11} & a_{12} & \cdots & a_{1n} \\ a_{21} & a_{22} & \cdots & a_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ a_{n1} & a_{n2} & \cdots & a_{nn} \end{bmatrix}$$