

# 1 Test the isomath Package

Default font families: serif `lmr`, sans-serif `lmss`, isomath-serif `lmr`, isomath-sf `lmss`.

## 1.1 Math alphabets

The math alphabets should work with GREEK letters too (thus access to upright greek is possible for both, small and capital letters). If there are ligatures (ff, fi, ...) instead of small Greek letters in a math alphabet, it uses T1 or OT1 encoding instead of OML.

New alphabets are defined for italic-bold, italic-sans, and italic-sans-bold.

<code>mathnormal</code>	$a, g, v, w, z, A, B, \Gamma, \Delta, E, \Theta, \Lambda, \Xi, \Pi, \Sigma, \Upsilon, \Phi, \Psi, \Omega, \alpha, \beta, \nu, \omega$
<code>mathit</code>	$a, g, v, w, z, A, B, \Gamma, \Delta, E, \Theta, \Lambda, \Xi, \Pi, \Sigma, \Upsilon, \Phi, \Psi, \Omega, \text{ff}, \text{fi}, ^\circ, !$
<code>mathrm</code>	$a, g, v, w, z, A, B, \Gamma, \Delta, E, \Theta, \Lambda, \Xi, \Pi, \Sigma, \Upsilon, \Phi, \Psi, \Omega, \text{ff}, \text{fi}, ^\circ, !$
<code>mathbf</code>	$\mathbf{a, g, v, w, z, A, B, \Gamma, \Delta, E, \Theta, \Lambda, \Xi, \Pi, \Sigma, \Upsilon, \Phi, \Psi, \Omega, \text{ff}, \text{fi}, ^\circ, !}$
<code>mathsf</code>	$a, g, v, w, z, A, B, \Gamma, \Delta, E, \Theta, \Lambda, \Xi, \Pi, \Sigma, \Upsilon, \Phi, \Psi, \Omega, \text{ff}, \text{fi}, ^\circ, !$
<code>mathhtt</code>	$a, g, v, w, z, A, B, \Gamma, \Delta, E, \Theta, \Lambda, \Xi, \Pi, \Sigma, \Upsilon, \Phi, \Psi, \Omega, , , ^\circ, !$
<code>mathbold</code>	$\mathbf{a, g, v, w, z, A, B, \Gamma, \Delta, E, \Theta, \Lambda, \Xi, \Pi, \Sigma, \Upsilon, \Phi, \Psi, \Omega, \alpha, \beta, \nu, \omega}$
<code>mathsans</code>	$a, g, v, w, z, A, B, \Gamma, \Delta, E, \Theta, \Lambda, \Xi, \Pi, \Sigma, \Upsilon, \Phi, \Psi, \Omega, \alpha, \beta, \nu, \omega$
<code>mathboldsans</code>	$\mathbf{a, g, v, w, z, A, B, \Gamma, \Delta, E, \Theta, \Lambda, \Xi, \Pi, \Sigma, \Upsilon, \Phi, \Psi, \Omega, \alpha, \beta, \nu, \omega}$

## 1.2 Vector symbols

Symbols for vectors are boldface italic  $\boldsymbol{\alpha} = \mathbf{e}_1 \cdot \mathbf{a}$

## 1.3 Matrix symbols

Symbols for matrices are boldface italic, i. e. typeset in the same face as vectors:<sup>1</sup>  
 $\boldsymbol{\Gamma} = \boldsymbol{E} \cdot \boldsymbol{A}$ .

## 1.4 Tensor symbols

Symbols for tensors are sans-serif bold italic,

$$\begin{aligned}\boldsymbol{\alpha} &= \boldsymbol{e} \cdot \boldsymbol{a}. \\ \boldsymbol{\alpha}_{ijl} &= \boldsymbol{e}_{ijk} \cdot \boldsymbol{a}_{kl}\end{aligned}$$

The permittivity tensor  $\epsilon$  describes the coupling of electric field and displacement:

$$\boldsymbol{D} = \epsilon_0 \epsilon_r \boldsymbol{E}$$

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<sup>1</sup>However, matrix symbols are usually capital letters whereas vectors are small ones. Exceptions are physical Quantities like the force vector  $\boldsymbol{F}$  or the electrical field  $\boldsymbol{E}$ .