

## Test the isomath Package

Fontpackage: []{tgcursor,tgheros,tgtermes,}

Isomath: [OMLmathsfit,]{isomath}

Default font families: Text serif qtm sans-serif qhv  
 Math serif qtm sans-serif cmbr

### Math alphabets

If there are other symbols in place of Greek letters in a math alphabet, it uses T1 or OT1 font encoding instead of OML.

|            |  |
|------------|--|
| mathnormal | $A, B, C, \Gamma, \Delta, \Theta, \Lambda, \Xi, \Pi, \Sigma, \Upsilon, \Phi, \Psi, \Omega, \alpha, \beta, \pi, \nu, \omega, \nu, w, a, g, 0, 1, 9$   |
| mathit     | $A, B, C, \Gamma, \Delta, \Theta, \Lambda, \Xi, \Pi, \Sigma, \Upsilon, \Phi, \Psi, \Omega, \mathfrak{f}, \mathfrak{f}, \beta, \circ, !, v, w, a, g, 0, 1, 9$   |
| mathrm     | $A, B, C, \Gamma, \Delta, \Theta, \Lambda, \Xi, \Pi, \Sigma, \Upsilon, \Phi, \Psi, \Omega, \mathfrak{f}, \mathfrak{f}, \beta, \circ, !, v, w, a, g, 0, 1, 9$   |
| mathbf     | $\mathbf{A}, \mathbf{B}, \mathbf{C}, \mathbf{\Gamma}, \mathbf{\Delta}, \mathbf{\Theta}, \mathbf{\Lambda}, \mathbf{\Xi}, \mathbf{\Pi}, \mathbf{\Sigma}, \mathbf{\Upsilon}, \mathbf{\Phi}, \mathbf{\Psi}, \mathbf{\Omega}, \mathfrak{f}, \mathfrak{f}, \beta, \circ, !, v, w, a, g, 0, 1, 9$ |
| mathsf     | $A, B, C, \Gamma, \Delta, \Theta, \Lambda, \Xi, \Pi, \Sigma, \Upsilon, \Phi, \Psi, \Omega, \mathfrak{f}, \mathfrak{f}, \beta, \circ, !, v, w, a, g, 0, 1, 9$   |
| mathtt     | $A, B, C, \Gamma, \Delta, \Theta, \Lambda, \Xi, \Pi, \Sigma, \Upsilon, \Phi, \Psi, \Omega, \uparrow, \downarrow, \mathfrak{f}, \circ, !, v, w, a, g, 0, 1, 9$  |

New alphabets bold-italic, sans-serif-italic, and sans-serif-bold-italic.

|            |  |
|------------|--|
| mathbfit   | $\mathbf{A}, \mathbf{B}, \mathbf{C}, \mathbf{\Gamma}, \mathbf{\Delta}, \mathbf{\Theta}, \mathbf{\Lambda}, \mathbf{\Xi}, \mathbf{\Pi}, \mathbf{\Sigma}, \mathbf{\Upsilon}, \mathbf{\Phi}, \mathbf{\Psi}, \mathbf{\Omega}, \alpha, \beta, \pi, \nu, \omega, \nu, w, a, g, 0, 1, 9$ |
| mathsf     | $A, B, C, \Gamma, \Delta, \Theta, \Lambda, \Xi, \Pi, \Sigma, \Upsilon, \Phi, \Psi, \Omega, \alpha, \beta, \pi, \nu, \omega, \nu, w, a, g, 0, 1, 9$   |
| mathsfbfit | $\mathbf{A}, \mathbf{B}, \mathbf{C}, \mathbf{\Gamma}, \mathbf{\Delta}, \mathbf{\Theta}, \mathbf{\Lambda}, \mathbf{\Xi}, \mathbf{\Pi}, \mathbf{\Sigma}, \mathbf{\Upsilon}, \mathbf{\Phi}, \mathbf{\Psi}, \mathbf{\Omega}, \alpha, \beta, \pi, \nu, \omega, \nu, w, a, g, 0, 1, 9$ |

Do the math alphabets match?

$\alpha x \omega \alpha x \omega \alpha x \omega \quad T C \Theta \Gamma T C \Theta \Gamma T C \Theta \Gamma$

### Vector symbols

Alphabetic symbols for vectors are boldface italic,  $\lambda = e_1 \cdot a$ , while numeric ones (e.g. the zero vector) are bold upright,  $a + \mathbf{0} = a$ .

### Matrix symbols

Symbols for matrices are boldface italic, too:<sup>1</sup>  $\mathbf{A} = \mathbf{E} \cdot \mathbf{A}$ .

### Tensor symbols

Symbols for tensors are sans-serif bold italic,

$$\boldsymbol{\alpha} = \mathbf{e} \cdot \mathbf{a} \iff \alpha_{ijl} = e_{ijk} \cdot a_{kl}.$$

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

$$\mathbf{D} = \epsilon_0 \boldsymbol{\epsilon}_r \mathbf{E}$$

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

## Bold math version

The “bold” math version is selected with the commands `\boldmath` or `\mathversion{bold}`

|                         |   |
|-------------------------|---|
| <code>mathnormal</code> | <i>A, B, C, Γ, Δ, Θ, Λ, Ξ, Π, Σ, Υ, Φ, Ψ, Ω, α, β, π, ν, ω, v, w, a, g, 0, 1, 9</i>   |
| <code>mathit</code>     | <i>A, B, C, Γ, Δ, Θ, Λ, Ξ, Π, Σ, Υ, Φ, Ψ, Ω, ff, fi, β, °, !, v, w, a, g, 0, 1, 9</i> |
| <code>mathrm</code>     | A, B, C, Γ, Δ, Θ, Λ, Ξ, Π, Σ, Υ, Φ, Ψ, Ω, ff, fi, β, °, !, v, w, a, g, 0, 1, 9        |
| <code>mathbf</code>     | <b>A, B, C, Γ, Δ, Θ, Λ, Ξ, Π, Σ, Υ, Φ, Ψ, Ω, ff, fi, β, °, !, v, w, a, g, 0, 1, 9</b> |
| <code>mathsf</code>     | <b>A, B, C, Γ, Δ, Θ, Λ, Ξ, Π, Σ, Υ, Φ, Ψ, Ω, ff, fi, β, °, !, v, w, a, g, 0, 1, 9</b> |
| <code>mathtt</code>     | A, B, C, Γ, Δ, Θ, Λ, Ξ, Π, Σ, Υ, Φ, Ψ, Ω, ↑, ↓, β, °, !, v, w, a, g, 0, 1, 9          |

New alphabets bold-italic, sans-serif-italic, and sans-serif-bold-italic.

|                         |  |
|-------------------------|--|
| <code>mathbfit</code>   | <b><i>A, B, C, Γ, Δ, Θ, Λ, Ξ, Π, Σ, Υ, Φ, Ψ, Ω, α, β, π, ν, ω, v, w, a, g, 0, 1, 9</i></b> |
| <code>mathsf</code>     | <b><i>A, B, C, Γ, Δ, Θ, Λ, Ξ, Π, Σ, Υ, Φ, Ψ, Ω, α, β, π, ν, ω, v, w, a, g, 0, 1, 9</i></b> |
| <code>mathsfbfit</code> | <b><i>A, B, C, Γ, Δ, Θ, Λ, Ξ, Π, Σ, Υ, Φ, Ψ, Ω, α, β, π, ν, ω, v, w, a, g, 0, 1, 9</i></b> |

Do the math alphabets match?

*αxαωaxαωaxαω* ***TCΘΓTCΘΓTCΘΓ***

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