

# MathML Torture Test

Safari -- 10/02/2012 -- iOS 6.0 w/native fonts

## NOTES:

- Alternate stylesheets are available from: [View](#) → [Page Style](#) → [STIX](#) | [Asana Math](#) | [MathJax](#)
- Right click on a MathML fragment and choose [View MathML Source](#) to get its source.
- In the examples below, the text won't be allowed to decrease pass the scriptminsize or your browser's minimum allowable font size -- this can be set with [Tools](#) → [Options](#) → [Content tab](#) → [Fonts & Colors](#) → [Advanced button](#) → [Minimum font size](#). To see the effect of the gradual decrease induced by changes in script levels more clearly, you may have to increase your default font size in the menu: [Tools](#) → [Options](#) → [Content tab](#) → [Fonts & Colors](#) → [Size](#).
  - Here is how the alphabet looks like at scriptminsize:  $a, b, c \dots x, y, z$
  - Here is how greek letters look like at scriptminsize:  $\alpha, \beta, \gamma \dots, \psi, \omega, \vartheta, \Upsilon, \varpi$
  - Here is how numbers look like at scriptminsize:  $0, 1, 2, \dots, 10, 11, 12, \dots$
- You can use [View](#) → [Zoom](#) → [Text Zoom](#) only checked in the usual way to zoom the MathML text along with the other text.
- The text [written that way](#) in the above remarks describes items in the menu bar. If you only see the Firefox menu, you can enable the menu bar with [Firefox](#) → [Options](#) → [Menubar](#).

	As rendered by TeX	As rendered by your browser
1	$x^2y^2$	$x^2y^2$
2	${}_2F_3$	$F 3 2$
3	$\frac{x + y^2}{k + 1}$	$\frac{x+y^2}{k+1}$
4	$x + y^{\frac{2}{k+1}}$	$x+y^{\frac{2}{k+1}}$
5	$\frac{a}{b/2}$	$\frac{a}{b/2}$
6	$a_0 + \frac{1}{a_1 + \frac{1}{a_2 + \frac{1}{a_3 + \frac{1}{a_4}}}}$	$a_0 + \frac{1}{a_1 + \frac{1}{a_2 + \frac{1}{a_3 + \frac{1}{a_4}}}}$

7	$a_0 + \frac{1}{a_1 + \frac{1}{a_2 + \frac{1}{a_3 + \frac{1}{a_4}}}}$	$a_0 + \frac{1}{a_1 + \frac{1}{a_2 + \frac{1}{a_3 + \frac{1}{a_4}}}}$
8	$\binom{n}{k/2}$	$\binom{n}{k/2}$
9	$\binom{p}{2} x^2 y^{p-2} - \frac{1}{1-x} \frac{1}{1-x^2}$	$\binom{p}{2} x^2 y^{p-2} - \frac{1}{1-x} \frac{1}{1-x^2}$
10	$\sum_{\substack{0 \leq i \leq m \\ 0 < j < n}} P(i, j)$	$\sum_{\substack{0 \leq i \leq m \\ 0 < j < n}} P(i, j)$
11	$x^{2y}$	$x^{2y}$
12	$\sum_{i=1}^p \sum_{j=1}^q \sum_{k=1}^r a_{ij} b_{jk} c_{ki}$	$\sum_{i=1}^p \sum_{j=1}^q \sum_{k=1}^r a_{ij} b_{jk} c_{ki}$
13	$\sqrt{1 + \sqrt{1 + \sqrt{1 + \sqrt{1 + \sqrt{1 + \sqrt{1 + \sqrt{1 + x}}}}}}}$	$\sqrt{1 + \sqrt{1 + \sqrt{1 + \sqrt{1 + \sqrt{1 + \sqrt{1 + \sqrt{1 + x}}}}}}}$
14	$\left( \frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2} \right)  \varphi(x + iy) ^2 = 0$	$\left( \frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2} \right)  \phi(x + iy) ^2 = 0$
15	$2^{2^{2^x}}$	$2^{2^{2^x}}$
16	$\int_1^x \frac{dt}{t}$	$\int_1^x \frac{dt}{t}$

17	$\iint_D dx dy$	$\iint_D dx dy$
18	$f(x) = \begin{cases} 1/3 & \text{if } 0 \leq x \leq 1; \\ 2/3 & \text{if } 3 \leq x \leq 4; \\ 0 & \text{elsewhere.} \end{cases}$	$f(x) = \begin{cases} 1/3 & \text{if } 0 \leq x \leq 1; \\ 2/3 & \text{if } 3 \leq x \leq 4; \\ 0 & \text{elsewhere.} \end{cases}$
19	$\overbrace{x + \dots + x}^{k \text{ times}}$	$\underbrace{x + \dots + x}_{k \text{ times}}$
20	$yx^2$	$yx^2$
21	$\sum_{p \text{ prime}} f(p) = \int_{t>1} f(t) d\pi(t)$	$\sum_{p \text{ prime}} f(p) = \int_{t>1} f(t) d\pi(t)$
22	$\overbrace{\{a, \dots, a, b, \dots, b\}}^{k \text{ a's } \quad l \text{ b's}}$ $k+l \text{ elements}$	$\underbrace{\{ \overbrace{a, \dots, a}^{k \text{ a's}}, \overbrace{b, \dots, b}^{\ell \text{ b's}} \}}_{k+l \text{ elements}}$
23	$\begin{pmatrix} \begin{pmatrix} a & b \\ c & d \end{pmatrix} & \begin{pmatrix} e & f \\ g & h \end{pmatrix} \\ 0 & \begin{pmatrix} i & j \\ k & l \end{pmatrix} \end{pmatrix}$	$\begin{pmatrix} \begin{pmatrix} ab \\ cd \end{pmatrix} & \begin{pmatrix} ef \\ gh \end{pmatrix} \\ 0 & \begin{pmatrix} ij \\ kl \end{pmatrix} \end{pmatrix}$
24	$\det \begin{vmatrix} c_0 & c_1 & c_2 & \dots & c_n \\ c_1 & c_2 & c_3 & \dots & c_{n+1} \\ c_2 & c_3 & c_4 & \dots & c_{n+2} \\ \vdots & \vdots & \vdots & & \vdots \\ c_n & c_{n+1} & c_{n+2} & \dots & c_{2n} \end{vmatrix} > 0$	$\det \begin{vmatrix} c_0 & c_1 & c_2 & \dots & c_n \\ c_1 & c_2 & c_3 & \dots & c_{n+1} \\ c_2 & c_3 & c_4 & \dots & c_{n+2} \\ \vdots & \vdots & \vdots & & \vdots \\ c_n & c_{n+1} & c_{n+2} & \dots & c_{2n} \end{vmatrix} > 0$

25	$y_{x_2}$	$y_{x_2}$
26	$x_{92}^{31415} + \pi$	$x_{92}^{31415+\pi}$
27	$x_{y_b}^{z_c^d}$	$x_{y_b}^{z_c^d}$
28	$y_3'''$	$y_3'''$