Our math formulas, like $x^n + y^n = z^n$, and

$$\sum_{i=1}^{n} \sin x + i^{\sin x} + i^{i^{\sin x}}$$

are going to be using the MathTime Professional 2 fonts, but the text font is just Computer Modern (the letters for 'sin' are going to come from cmr10, cmr7 and cmr5).

Here are some math formulas that should all work out OK.

$$A,\ldots,Z \qquad a,\ldots,z \qquad \mathit{\Gamma},\ldots,\mathit{\Omega} \qquad \Gamma,\ldots,\Omega \qquad \alpha,\ldots,\omega$$
$$2^{A,\ldots,Z \qquad a,\ldots,z \qquad \mathit{\Gamma},\ldots,\mathit{\Omega} \qquad \Gamma,\ldots,\Omega \qquad \alpha,\ldots,\omega}$$
$$2^{2^{A,\ldots,Z \qquad a,\ldots,z \qquad \mathit{\Gamma},\ldots,\mathit{\Omega} \qquad \Gamma,\ldots,\Omega \qquad \alpha,\ldots,\omega}}$$

$$\aleph_\alpha \times \aleph_\beta = \beta \iff \alpha \le \beta$$
$$2^{\aleph_\alpha \times \aleph_\beta = \beta \iff \alpha \le \beta}$$
$$2^{2^{\aleph_\alpha \times \aleph_\beta = \beta \iff \alpha \le \beta}}$$

$$\forall \varepsilon > \alpha, \mathit{\Gamma}_\alpha \hookrightarrow \mathit{\Gamma}_\varepsilon$$
$$2^{\forall \varepsilon > \alpha, \mathit{\Gamma}_\alpha \hookrightarrow \mathit{\Gamma}_\varepsilon}$$
$$2^{2^{\forall \varepsilon > \alpha, \mathit{\Gamma}_\alpha \hookrightarrow \mathit{\Gamma}_\varepsilon}}$$

$$|x-a| < \delta \Longrightarrow |f(x) - l| < \varepsilon$$
$$2^{|x-a| < \delta \Longrightarrow |f(x) - l| < \varepsilon}$$
$$2^{2^{|x-a| < \delta \Longrightarrow |f(x) - l| < \varepsilon}}$$

$$\underbrace{V \times \cdots \times V}_{k} \times \underbrace{V \times \cdots \times V}_{l} \to \underbrace{V \times \cdots \times V}_{k+l}$$
$$2^{\underbrace{V \times \cdots \times V}_{k} \times \underbrace{V \times \cdots \times V}_{l} \to \underbrace{V \times \cdots \times V}_{k+l}}$$
$$2^{2^{\underbrace{V \times \cdots \times V}_{k} \times \underbrace{V \times \cdots \times V}_{l} \to \underbrace{V \times \cdots \times V}_{k+l}}}$$

$$\{x | x \neq x\} = \emptyset \qquad (A \cap B)^\circ \subset A^\circ \cap B^\circ$$
$$2^{\{x | x \neq x\} = \emptyset \qquad (A \cap B)^\circ \subset A^\circ \cap B^\circ}$$
$$2^{2^{\{x | x \neq x\} = \emptyset \qquad (A \cap B)^\circ \subset A^\circ \cap B^\circ}}$$

$$\omega = \nu + v(x,y)\,dx + w(x,y)\,dy + d\varkappa$$
$$2^{\omega = \nu + v(x,y)\,dx + w(x,y)\,dy + d\varkappa}$$
$$2^{2^{\omega = \nu + v(x,y)\,dx + w(x,y)\,dy + d\varkappa}}$$

$$d\omega = dv + \left(\frac{\partial w}{\partial x} - \frac{\partial v}{\partial y} \right) dx \wedge dy$$

$$2^{d\omega = dv + \left(\frac{\partial w}{\partial x} - \frac{\partial v}{\partial y} \right) dx \wedge dy}$$

$$2^{2^{d\omega = dv + \left(\frac{\partial w}{\partial x} - \frac{\partial v}{\partial y} \right) dx \wedge dy}}$$

$$\hat{x} + \widehat{X} + \widehat{xy} + \widehat{xyz} + \vec{A}$$

$$2^{\hat{x} + \widehat{X} + \widehat{xy} + \widehat{xyz} + \vec{A}}$$

$$2^{2^{\hat{x} + \widehat{X} + \widehat{xy} + \widehat{xyz} + \vec{A}}}$$

$$R_{ijkl} = -R_{jikl} = -R_{ijlk} = R_{klij}$$

$$2^{R_{ijkl} = -R_{jikl} = -R_{ijlk} = R_{klij}}$$

$$2^{2^{R_{ijkl} = -R_{jikl} = -R_{ijlk} = R_{klij}}}$$

$$(f \circ g)'(x) = f'(g(x)) \cdot g'(x)$$

$$2^{(f \circ g)'(x) = f'(g(x)) \cdot g'(x)}$$

$$2^{2^{(f \circ g)'(x) = f'(g(x)) \cdot g'(x)}}$$

$$f(x) = \begin{cases} |x| & x > a \\ -|x| & x \leq a \end{cases}$$

$$2^{f(x) = \begin{cases} |x| & x > a \\ -|x| & x \leq a \end{cases}}$$

$$2^{2^{f(x) = \begin{cases} |x| & x > a \\ -|x| & x \leq a \end{cases}}}$$

$$\int_{-\infty}^{\infty} e^{-x \cdot x} \, dx = \sqrt{\pi}$$

$$2^{\int_{-\infty}^{\infty} e^{-x \cdot x} \, dx = \sqrt{\pi}}$$

$$2^{2^{\int_{-\infty}^{\infty} e^{-x \cdot x} \, dx = \sqrt{\pi}}}$$

$$X = \sum_i \xi^i \frac{\partial}{\partial x^i} + \sum_j x^j \frac{\partial}{\partial \dot{x}^j}$$

$$2^{X = \sum_i \xi^i \frac{\partial}{\partial x^i} + \sum_j x^j \frac{\partial}{\partial \dot{x}^j}}$$

$$2^{2^{X = \sum_i \xi^i \frac{\partial}{\partial x^i} + \sum_j x^j \frac{\partial}{\partial \dot{x}^j}}}$$

Bold letters in math can be taken from the Times bold symbols:

$$A_{\mathbf{X}}(f) = \mathbf{X}(\mathbf{f}) = 2^{\mathbf{2}^{\mathbf{X}(\mathbf{g})}}$$

We can also get 'calligraphic' letters:

$$\mathcal{A}, \mathcal{B}, \ldots, \mathcal{Z}$$

Compare

$$X_f + X_j + X_p + X_t + X_y + X_A + X_B + X_D + X_H + X_I + X_K + X_L + X_M + X_P + X_X$$

with the following (with no adjustments):

$$X_f + X_j + X_p + X_t + X_y + X_A + X_B + X_D + X_H + X_I + X_K + X_L + X_M + X_P + X_X$$

We have the special accent

$$\mathring{x}$$

and can replace

$$\dot{\Gamma} + \ddot{\Gamma}$$

with

$$\dot{\Gamma} + \ddot{\Gamma}$$

There are

$$\hat{A} + \widehat{A} + \widehat{A} + \widehat{A} + +\hat{M} + \widehat{M} + \widehat{M} + \widehat{M} + \widehat{xy} + \widehat{xyz} + \widehat{xyzw} + \widehat{x + y + z + \cdots + w}$$

and

$$\tilde{A} + \widetilde{A} + \widetilde{A} + \widetilde{A} + +\tilde{M} + \widetilde{M} + \widetilde{M} + \widetilde{M} + \widetilde{xy} + \widetilde{xyz} + \widetilde{xyzw} + \widetilde{x + y + z + \cdots + w}$$

and

$$\check{A} + \check{A} + \check{A} + \check{A} + +\check{M} + \check{M} + \check{M} + \check{M} + \check{xy} + \check{xyz} + \check{xyzw} + \check{x + y + z + \cdots + w}$$

and

$$\bar{M} + \bar{M} + \overline{M} + \overline{x + y + z}$$

We have

$$\alpha_c^{-1} \cdot \alpha_c{}' = \begin{pmatrix} 0 & 0 & \ldots & -\varkappa_1 \\ 1 & 0 & & -\varkappa_2 \\ 0 & 1 & & \vdots \\ \vdots & \vdots & & -\varkappa_{n-1} \\ 0 & 0 & \ldots 1 & 0 \end{pmatrix}$$

versus

$$\alpha_c^{-1} \cdot \alpha_c{}' = \left(\begin{matrix} 0 & 0 & \ldots & -\varkappa_1 \\ 1 & 0 & & -\varkappa_2 \\ 0 & 1 & & \vdots \\ \vdots & \vdots & & -\varkappa_{n-1} \\ 0 & 0 & \ldots 1 & 0 \end{matrix}\right)$$

Similarly, instead of having to rely on an extensible square root symbol, we can also get individually designed ones:

$$\sqrt{\sum_{i=1}^{n} (y^i - x^i)^2} \quad \text{vs.} \quad \sqrt{\sum_{i=1}^{n} (y^i - x^i)^2}$$