1. Superscripts :

$2x^3$

$$2x^3$$

wrong $2x^32$
correct $2x^{34}$
exponent within an exponent : $2x^{3x^2+5}$

2. subscripts :

$$x_1$$

$$x_{12dahfkja}$$

$$x_{123345}$$

3. Greek letters :

$$\pi$$

$$\alpha$$

$$A = \pi r^2$$

4. Trigonometry :

$$y = \sin\theta$$

$$y = \cos\phi$$

$$y = \tan\sigma$$

5. Logarithmic functions:

$$log = \log x$$

$$log_5 = \log_2 x$$

$$log_5 = \log_{2236} x$$

$$ln = \ln x$$

6. Square Root:

$$\sqrt{x}$$

$$\sqrt[35]{y}$$

$$\sqrt{x^2 + y^3}$$

$$\sqrt{1 + \sqrt{y}}$$

7. Fractions :

About 2/3 of the class is idiot.
About $\frac{x}{y}$ of the class is idiot. Note: size of fraction is smaller, this is done to fit the fraction in the same line, but it makes reading problematic so we can use another command "diplaystylecontent" this function makes the content of same

size to that of whole text.

About $\frac{x}{y}$ of the class is idiot.

$$\frac{x}{x^6 + 35x^3 + 45x + 3}$$

$$\frac{\sqrt[3]{1+x}}{\sqrt[5]{1+x}}$$