Gaussian function:

$$y = y_o + \frac{A}{w\sqrt{\frac{\pi}{4ln(2)}}} e(\frac{-4ln(2)(x - x_c)^2}{w^2}) \tag{1}$$

Lorentzian function:

$$y = y_o + \frac{2A}{\pi} \frac{w}{4(x - x_c)^2 + w^2} \tag{2}$$

Pseudo-Voigt function:

$$y = y_o + (f_L * f_G)(x) \tag{3}$$

$$y = y_o + A\frac{2ln(2)}{\pi^{3/2}} \frac{wL}{wG} \int_{-\infty}^{\infty} \frac{e^{-t^2}}{(\sqrt{l}n(2)\frac{wL}{wG})^2 + (\sqrt{4}ln(2)\frac{x-x_c}{wG} - t)^2} dt \tag{4}$$