Equations in LATEX

Equation 1

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$= \frac{-2 \pm \sqrt{2^2 - 4 * (1) * (-8)}}{2 * 1}$$

$$= \frac{-2 \pm \sqrt{4 + 32}}{2}$$

Equation 2

$$\varphi_{\sigma}^{\lambda} A_t = \sum_{\pi \in C_t} sgn(\pi) \varphi_{\sigma}^{\lambda} \varphi_{\pi}^{\lambda}$$