Binomische Formeln

$$(a \pm b)^2 = a^2 \pm 2ab + b^2$$

$$(a+b)\cdot(a-b) = a^2 - b^2$$

Logarithmen

$$\log_a(b) = \frac{\ln(b)}{\ln(a)} \qquad \log_a(1) = 0$$

$$\log_a(b^x) = x \cdot \log_a(b)$$

$$\log_a\left(\frac{1}{b}\right) = -\log_a(b)$$

Potenzgleichungen

$x^n = a \quad (a > 0)$

falls n gerade: $x_{1;2} = \pm \sqrt[n]{a}$

falls n ungerade: $x = \sqrt[n]{a}$

$x^n = a \quad (a < 0)$

falls n ungerade: $x = -\sqrt[n]{-a}$

Quadratische Gleichung

$$x^2 + px + q = 0$$

$$x_{1;2} = -\frac{p}{2} \pm \sqrt{\left(\frac{p}{2}\right)^2 - q}$$

$$ax^2 + bx + c = 0$$

$$x_{1;2} = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$