## Matheumgebung

1) 
$$a^2 + b^2 = c^2$$

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

3) 
$$\frac{a}{b} \div \frac{c}{d} = \frac{a}{b} \cdot \frac{c}{d}$$

4) 
$$f(x) = \ln(\frac{x}{2}) + \sin(x)$$

5) 
$$f_a(x) = e^{\frac{x^2}{x+2} + 2x} + ax$$

6) 
$$g'(x) = 2x$$

7) 
$$\int_a^b f(x)dx$$

8) 
$$(\sum_{i=1}^{n} f_i(x))'$$

9) 
$$(a-b)(a+b) = a^2 - b^2$$

## $\mathbf{2}$ pq-formel

$$0 = x^2 + 10x + 16$$

$$=>0=x^2+px+(\frac{P}{2})^2-(\frac{P}{2})^2+(\frac{P}$$

$$=>0=(x+\frac{p}{2})^2-(\frac{P}{2})^2+q^2$$

$$=> (\frac{p}{2})^2 = (x + \frac{p}{2})^2 |\sqrt{\dots}|$$

$$=> x_1 = -\frac{p}{2} + \sqrt{(\frac{p}{2})^2 - q}$$

$$0 = x^2 + 10x + 16$$

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

$$0 = x^{2} + 10x + 16$$

$$=> 0 = x^{2} + px + q$$

$$=> 0 = x^{2} + px + (\frac{P}{2})^{2} - (\frac{P}{2})^{2} + q$$

$$=> 0 = (x + \frac{P}{2})^{2} - (\frac{P}{2})^{2} + q$$

$$=> (\frac{P}{2})^{2} = (x + \frac{P}{2})^{2} | \sqrt{\dots}$$

$$=> \pm \sqrt{(\frac{P}{2})^{2} - q} = x + \frac{P}{2} | -\frac{P}{2}$$

$$=> x_{1} = -\frac{P}{2} + \sqrt{(\frac{P}{2})^{2} - q}$$

$$=> x_{2} = -\frac{P}{2} - \sqrt{(\frac{P}{2})^{2} - q}$$

$$=>0=(x+\frac{p}{2})^2-(\frac{P}{2})^2+q$$

$$=> (\frac{p}{2})^2 = (x + \frac{p}{2})^2 | \sqrt{\dots}$$

$$=>\pm\sqrt{(\frac{p}{2})^2-q}=x+\frac{p}{2}|-\frac{p}{2}|$$

$$=> x_1 = -\frac{p}{2} + \sqrt{(\frac{p}{2})^2 - q}$$

$$=> x_2 = -\frac{p}{2} - \sqrt{(\frac{p}{2})^2 - q}$$