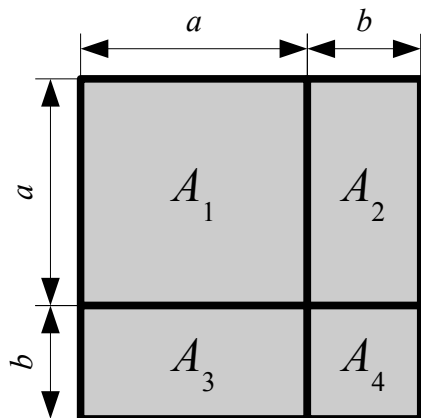


Binomische Formeln



Berechnen Sie durch Multiplikation:

$$\begin{aligned} (a+b)^2 &= (a+b)(a+b) \\ &= a^2 + ab + ab + b^2 \\ &= a^2 + 2ab + b^2 \end{aligned}$$

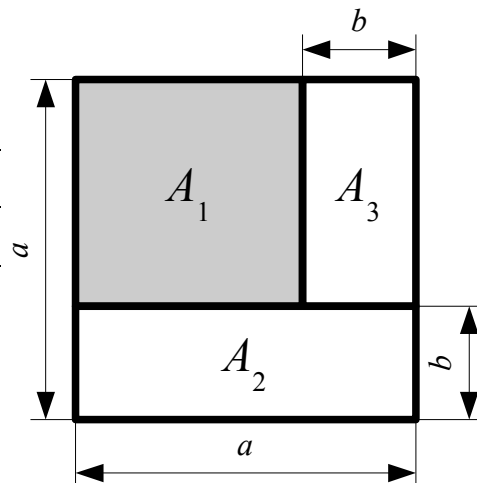


1. Binomische Formel

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

Berechnen Sie durch Multiplikation:

$$\begin{aligned} (a-b)^2 &= (a-b)(a-b) \\ &= a^2 - ab - ab + b^2 \\ &= a^2 - 2ab + b^2 \end{aligned}$$



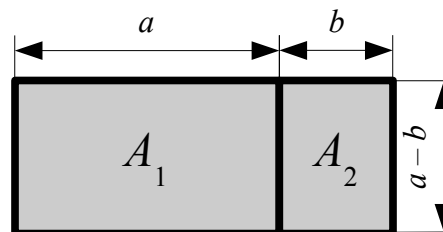
2. Binomische Formel

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



Berechnen Sie durch Multiplikation:

$$\begin{aligned} (a+b)(a-b) &= a^2 + ab - ab - b^2 \\ &= a^2 - b^2 \end{aligned}$$



3. Binomische Formel

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

Schreiben Sie das Ergebnis mit Hilfe der Binomischen Formeln sofort hin!

- Beispiel: $(2n+m)^2 = 4n^2 + 4nm + m^2$
- A) $(x+y)^2 = x^2 + 2xy + y^2$
 - B) $(p-q)^2 = p^2 - 2pq + q^2$
 - C) $(n-2m)^2 = n^2 - 4nm + (2m)^2 = n^2 - 4nm + 4m^2$
 - D) $(2+q)(2-q) = 2^2 - q^2 = 4 - q^2$
 - E) $(x+3y)^2 = x^2 + 6xy + (3y)^2 = x^2 + 6xy + 9y^2$
 - F) $(n-3m)^2 = n^2 - 6nm + (3m)^2 = n^2 - 6nm + 9m^2$
 - G) $(n+3)(n-3) = n^2 - 3^2 = n^2 - 9$
 - H) $(2x+2y)^2 = (2x)^2 + 8xy + (2y)^2 = 4x^2 + 8xy + 4y^2$
 - I) $(2-3m)^2 = 2^2 - 12m + (3m)^2 = 4 - 12m + 9m^2$
 - J) $(2+3q)(2-3q) = 2^2 - (3q)^2 = 4 - 9q^2$
 - K) $(4+k)^2 = 4^2 + 8k + k^2 = 16 + 8k + k^2$
 - L) $(x-5)^2 = x^2 - 10x + 5^2 = x^2 - 10x + 25$