

Binomische Formeln - Ergänzung

Drei binomische Formeln

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



Ergänze die fehlenden Teile!

$$(2x + 5)^2 = 4x^2 + 20x + \underline{\hspace{2cm}}$$

$$(3z + 5)^2 = \underline{\hspace{2cm}}z^2 + 30z + 25$$

$$(2a - 6)^2 = 4a^2 - \underline{\hspace{2cm}}a + 36$$

$$(4a - \underline{\hspace{2cm}})^2 = 16a^2 - 56a + 49$$

$$\underline{\hspace{2cm}}y^2 - 64 = (2y - 8) \cdot (2y + 8)$$

$$(2x + \underline{\hspace{2cm}})^2 = 4x^2 + 16x + 16$$

$$16x^2 - 16 = (\underline{\hspace{2cm}}x - 4) \cdot (\underline{\hspace{2cm}}x + 4)$$

$$\underline{\hspace{2cm}}y^2 - 36 = (8y - 6) \cdot (8y + 6)$$

$$(7b - 3)^2 = \underline{\hspace{2cm}}b^2 - 42b + 9$$

$$(7s + \underline{\hspace{2cm}})^2 = 49s^2 + 126s + 81$$

$$(5x + 6)^2 = 25x^2 + 60x + \underline{\hspace{2cm}}$$

$$9c^2 - 16 = (3c - \underline{\hspace{2cm}}) \cdot (3c + \underline{\hspace{2cm}})$$

$$16c^2 - 16 = (4c - \underline{\hspace{2cm}}) \cdot (4c + \underline{\hspace{2cm}})$$

$$(6x - 5)^2 = \underline{\hspace{2cm}}x^2 - 60x + 25$$

$$(7y + 3)^2 = 49y^2 + \underline{\hspace{2cm}}y + 9$$

$$(7y - \underline{\hspace{2cm}})^2 = 49y^2 - 70y + 25$$

$$(4x + 6)^2 = \underline{\hspace{2cm}}x^2 + 48x + 36$$

$$(9x - 8)^2 = 81x^2 - 144x + \underline{\hspace{2cm}}$$

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Ergänze die fehlenden Teile!

$$(7x - \underline{\quad})^2 = 49x^2 - 56x + 16$$

$$25a^2 - \underline{\quad} = (5a - 7) \cdot (5a + 7)$$

$$(5y + \underline{\quad})^2 = 25y^2 + 80y + 64$$

$$(2z + 3)^2 = \underline{\quad} + 12z + 9$$

$$(\underline{\quad} - 2)^2 = 16a^2 - 16a + 4$$

$$64x^2 - 36 = (\underline{\quad} - 6) \cdot (\underline{\quad} + 6)$$

$$9z^2 - \underline{\quad} = (3z - 3) \cdot (3z + 3)$$

$$(\underline{\quad} - 8)^2 = 36y^2 - 96y + 64$$

$$(3x - \underline{\quad})^2 = 9x^2 - 18x + 9$$

$$(8x - 2)^2 = 64x^2 - 32x + \underline{\quad}$$

$$(\underline{\quad} - 7)^2 = 16x^2 - 56x + 49$$

$$(8z + \underline{\quad})^2 = 64z^2 + 48z + 9$$

$$(6y - 4)^2 = \underline{\quad} - 48y + 16$$

$$(\underline{\quad} - 6)^2 = 4a^2 - 24a + 36$$

$$(9c + 2)^2 = 81c^2 + \underline{\quad} + 4$$

$$4x^2 - \underline{\quad} = (2x - 3) \cdot (2x + 3)$$

$$(\underline{\quad} - 4)^2 = 16x^2 - 32x + 16$$

$$(\underline{\quad} + 5)^2 = 81c^2 + 90c + 25$$

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Ergänze die fehlenden Teile!

$$(9x - 5y)^2 = 81x^2 - 90xy + \underline{\hspace{2cm}}$$

$$16x^2 - 49y^2 = (4x - \underline{\hspace{1cm}}) \cdot (4x + \underline{\hspace{1cm}})$$

$$(3x + z)^2 = 9x^2 + \underline{\hspace{2cm}} + z^2$$

$$(6c - 4d)^2 = \underline{\hspace{2cm}} - 48cd + 16d^2$$

$$16c^2 - \underline{\hspace{2cm}} = (4x - 9d) \cdot (4x + 9d)$$

$$(7a - \underline{\hspace{2cm}})^2 = 49a^2 - 84ab + 36b^2$$

$$(\underline{\hspace{2cm}} - 7y)^2 = 16x^2 - 56xy + 49y^2$$

$$\underline{\hspace{2cm}} - 36y^2 = (4x - 6y) \cdot (4x + 6y)$$

$$(8a + 9b)^2 = 64a^2 + 144ab + \underline{\hspace{2cm}}$$

$$(\underline{\hspace{2cm}} - 9z)^2 = 64x^2 - 144xz + 81z^2$$

$$(\underline{\hspace{2cm}} + 3z)^2 = 36x^2 + 36xz + 9z^2$$

$$\underline{\hspace{2cm}} - 4y^2 = (5x - 2y) \cdot (5x + 2y)$$

$$\underline{\hspace{2cm}} - 64y^2 = (7x - 8y) \cdot (7x + 8y)$$

$$(6a + 3b)^2 = 36a^2 + 36ab + \underline{\hspace{2cm}}$$

$$(7x - 3y)^2 = 49x^2 - 42xy + \underline{\hspace{2cm}}$$

$$(4s + 2t)^2 = 16s^2 + \underline{\hspace{2cm}} + 4t^2$$

$$\underline{\hspace{2cm}} - 9b^2 = (6a - 3b) \cdot (6a + 3b)$$

$$(\underline{\hspace{2cm}} + 2y)^2 = 9x^2 + 12xy + 4y^2$$

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Drei binomische Formeln $(a + b)^2 = a^2 + 2ab + b^2$

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

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



Ergänze so, dass man eine binomische Formel anwenden kann und bilde dann das Binom.

$$9x^2 + 12x + \boxed{} = (3x + 2)^2$$

$$16 + \boxed{} + 81x^2$$

$$\boxed{} - 20x + 25$$

$$49a^2 - 84a + \boxed{}$$

$$25a^2 - \boxed{} + 16$$

$$\boxed{} - 12y + 9$$

$$64z^2 + 96z + \boxed{}$$

$$\boxed{} - 48z + 64$$

$$\boxed{} - 54y + 81$$

$$64 + 32x + \boxed{}$$

$$25b^2 + \boxed{} + 81$$

$$16s^2 - \boxed{} + 9$$

$$\boxed{} + 98x + 49$$

$$\boxed{} - 112x + 49$$

$$16 - 64y + \boxed{}$$

$$4c^2 + 32c + \boxed{}$$

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$$(2x + \boxed{})^2 = 4x^2 + \boxed{} + 4y^2$$

$$(5x - \boxed{})^2 = 25x^2 - \boxed{} + 25$$

$$(\boxed{} - 6y)^2 = 49x^2 - 84xy + \boxed{}$$

$$(\boxed{} - 3)^2 = 81a^2 - 54a + \boxed{}$$

$$(\boxed{} + 7b)^2 = 81a^2 + 126ab + \boxed{}$$

$$\boxed{} - 81z^2 = (8x - 9z) \cdot (8x + \boxed{})$$

$$(2s^2 - 9t)^2 = \boxed{} - 36s^2t + \boxed{}$$

$$(6c + \boxed{})^2 = \boxed{} + 48cd + 16d^2$$

$$25x^2 - \boxed{} = (5x - 3y) \cdot (5x + \boxed{})$$

$$(\boxed{} + 9)^2 = 25x^2 + \boxed{} + 81$$

$$16x^2 - 64y^4 = (4x - \boxed{}) \cdot (4x + \boxed{})$$

$$(\boxed{} + 2b^2)^2 = 16a^2 + \boxed{} + 4b^4$$

$$\boxed{} + 2b)^2 = 4a^2 + \boxed{} + 4b^2$$

$$\boxed{} - 64z^2 = (\boxed{} - 8z) \cdot (5y + 8z)$$

$$36x^2 - 1 = (6x - \boxed{}) \cdot (6x + \boxed{})$$

$$(5x + \boxed{})^2 = 25x^2 + \boxed{} + 64y^2$$

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Ergänze die fehlenden Teile!

$$(2x + 5)^2 = 4x^2 + 20x + \underline{25}$$

$$(3z + 5)^2 = \underline{9}z^2 + 30z + 25$$

$$(2a - 6)^2 = 4a^2 - \underline{24}a + 36$$

$$(4a - \underline{7})^2 = 16a^2 - 56a + 49$$

$$\underline{4}y^2 - 64 = (2y - 8) \cdot (2y + 8)$$

$$(2x + \underline{4})^2 = 4x^2 + 16x + 16$$

$$16x^2 - 16 = (\underline{4}x - 4) \cdot (\underline{4}x + 4)$$

$$\underline{64}y^2 - 36 = (8y - 6) \cdot (8y + 6)$$

$$(7b - 3)^2 = \underline{49}b^2 - 42b + 9$$

$$(7s + \underline{9})^2 = 49s^2 + 126s + 81$$

$$(5x + 6)^2 = 25x^2 + 60x + \underline{36}$$

$$9c^2 - 16 = (3c - \underline{4}) \cdot (3c + \underline{4})$$

$$16c^2 - 16 = (4c - \underline{4}) \cdot (4c + \underline{4})$$

$$(6x - 5)^2 = \underline{36}x^2 - 60x + 25$$

$$(7y + 3)^2 = 49y^2 + \underline{42}y + 9$$

$$(7y - \underline{5})^2 = 49y^2 - 70y + 25$$

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$$(5y + \underline{8})^2 = 25y^2 + 80y + 64$$

$$(2z + 3)^2 = \underline{4z^2} + 12z + 9$$

$$(\underline{4a} - 2)^2 = 16a^2 - 16a + 4$$

$$64x^2 - 36 = (\underline{8x} - 6) \cdot (\underline{8x} + 6)$$

$$9z^2 - \underline{9} = (3z - 3) \cdot (3z + 3)$$

$$(\underline{6y} - 8)^2 = 36y^2 - 96y + 64$$

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$$(6y - 4)^2 = \underline{36y^2} - 48y + 16$$

$$(\underline{2a} - 6)^2 = 4a^2 - 24a + 36$$

$$(9c + 2)^2 = 81c^2 + \underline{36c} + 4$$

$$4x^2 - \underline{9} = (2x - 3) \cdot (2x + 3)$$

$$(\underline{4x} - 4)^2 = 16x^2 - 32x + 16$$

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$$(9x - 5y)^2 = 81x^2 - 90xy + \underline{25y^2}$$

$$16x^2 - 49y^2 = (4x - \underline{7y}) \cdot (4x + \underline{7y})$$

$$(3x + z)^2 = 9x^2 + \underline{18xz} + z^2$$

$$(6c - 4d)^2 = \underline{36c^2} - 48cd + 16d^2$$

$$16c^2 - \underline{81d^2} = (4x - 9d) \cdot (4x + 9d)$$

$$(7a - \underline{6b})^2 = 49a^2 - 84ab + 36b^2$$

$$(\underline{4x} - 7y)^2 = 16x^2 - 56xy + 49y^2$$

$$\underline{16x^2} - 36y^2 = (4x - 6y) \cdot (4x + 6y)$$

$$(8a + 9b)^2 = 64a^2 + 144ab + \underline{81b^2}$$

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$$(\underline{6x} + 3z)^2 = 36x^2 + 36xz + 9z^2$$

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Ergänze so, dass man eine binomische Formel anwenden kann und bilde dann das Binom.

$$9x^2 + 12x + \boxed{4} = (3x + 2)^2$$

$$16 + \boxed{72x} + 81x^2 = (4 + 9x)^2$$

$$\boxed{4x^2} - 20x + 25 = (2x - 5)^2$$

$$49a^2 - 84a + \boxed{36} = (7a - 6)^2$$

$$25a^2 - \boxed{40a} + 16 = (5a - 4)^2$$

$$\boxed{4y^2} - 12y + 9 = (2y - 3)^2$$

$$64z^2 + 96z + \boxed{36} = (8z + 6)^2$$

$$\boxed{9z^2} - 48z + 64 = (3z - 8)^2$$

$$\boxed{9y^2} - 54y + 81 = (3y - 9)^2$$

$$64 + 32x + \boxed{4x^2} = (8 + 2x)^2$$

$$25b^2 + \boxed{90b} + 81 = (5b + 9)^2$$

$$16s^2 - \boxed{24s} + 9 = (4s - 3)^2$$

$$\boxed{49x^2} + 98x + 49 = (7x + 7)^2$$

$$\boxed{64x^2} - 112x + 49 = (8x - 7)^2$$

$$16 - 64y + \boxed{64y^2} = (4 - 8y)^2$$

$$4c^2 + 32c + \boxed{64} = (2c + 8)^2$$

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$$(2x + 2y)^2 = 4x^2 + 8xy + 4y^2$$

$$(5x - 5)^2 = 25x^2 - 50x + 25$$

$$(7x - 6y)^2 = 49x^2 - 84xy + 36y^2$$

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$$(9a + 7b)^2 = 81a^2 + 126ab + 49b^2$$

$$64x^2 - 81z^2 = (8x - 9z) \cdot (8x + 9z)$$

$$(2s^2 - 9t)^2 = 4s^4 - 36s^2t + 81t^2$$

$$(6c + 4d)^2 = 36c^2 + 48cd + 16d^2$$

$$25x^2 - 9y^2 = (5x - 3y) \cdot (5x + \quad)$$

$$(5x + 9)^2 = 25x^2 + 90x + 81$$

$$16x^2 - 64y^4 = (4x - 8y^2) \cdot (4x + 8y^2)$$

$$(4a + 2b^2)^2 = 16a^2 + 16ab^2 + 4b^4$$

$$(2a + 2b)^2 = 4a^2 + 8ab + 4b^2$$

$$25y^2 - 64z^2 = (5y - 8z) \cdot (5y + 8z)$$

$$36x^2 - 1 = (6x - 1) \cdot (6x + 1)$$

$$(5x + 8y)^2 = 25x^2 + 80xy + 64y^2$$