**Lösungen**:

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| **1** | Bitte berechnen Sie |

a) $(-10{,}92f + 11{,}48)(-10{,}92f - 11{,}48)$   | L:   $119{,}2464f^2 - 131{,}7904$
b) $(6{,}43j + 6{,}81n)(6{,}43j - 6{,}81n)$   | L:   $41{,}3449j^2 - 46{,}3761n^2$
c) $(-2{,}53b - 5{,}56)^2$   | L:   $6{,}4009b^2 + 28{,}1336b + 30{,}9136$
d) $(4{,}61p - 5{,}17o)^2$   | L:   $21{,}2521p^2 - 47{,}6674op + 26{,}7289o^2$
e) $(k^2m^2z^2 - mwz^2)(k^2m^2z^2 + mwz^2)$   | L:   $k^4m^4z^4 - m^2w^2z^4$
f) $(-6a^2f^2u - 1)(-6a^2f^2u + 1)$   | L:   $36a^4f^4u^2 - 1$
g) $(-6eg^2y + 5g)^2$   | L:   $36e^2g^4y^2 - 60eg^3y + 25g^2$
h) $(-12t^2x^2 - 11ht^2)^2$   | L:   $144t^4x^4 + 264ht^4x^2 + 121h^2t^4$

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| **2** | Was war die ursprüngliche binomische Formel? |

a) $84{,}64o^2 - 7{,}29$   | L:   $(9{,}2o + 2{,}7)(9{,}2o - 2{,}7)$
b) $12{,}25n^2 + 45{,}5n^2r + 42{,}25n^2r^2$   | L:   $(3{,}5n + 6{,}5nr)^2$
c) $38{,}44h^4n^2 + 66{,}96h^2nz^2 + 29{,}16z^4$   | L:   $(6{,}2h^2n + 5{,}4z^2)^2$
d) $18{,}49k^4 + 87{,}72k^2z + 104{,}04z^2$   | L:   $(4{,}3k^2 + 10{,}2z)^2$
e) $10{,}89w^4y^2 - 18{,}48w^2y^3 + 7{,}84y^4$   | L:   $(3{,}3w^2y - 2{,}8y^2)^2$
f) $70{,}56k^2r^4 - 92{,}4kr^2 + 30{,}25$   | L:   $(8{,}4kr^2 - 5{,}5)^2$

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| **3** | Bitte finden Sie die quadratische Ergänzung: |

a) $25c^4 - 30c^2$   | L:   $25c^4 - 30c^2 + 9$      $= (5c^2 - 3)^2$
b) $16s^4 - 8s^2$   | L:   $16s^4 - 8s^2 + 1$      $= (4s^2 - 1)^2$
c) $144a^2y^2 + 168ay$   | L:   $144a^2y^2 + 168ay + 49$      $= (12ay + 7)^2$
d) $t^2x^4 - 2tx^2$   | L:   $t^2x^4 - 2tx^2 + 1$      $= (tx^2 - 1)^2$
e) $x^2 + px$   | L:   $x^2 + px + 0{,}25p^2$      $= (x + 0{,}5p)^2$
f) $116{,}64w^2z^2 + 114{,}48w^2z$   | L:   $116{,}64w^2z^2 + 114{,}48w^2z + 28{,}09w^2 = (10{,}8wz + 5{,}3w)^2$
g) $49d^4 + 121{,}8d^2s^2$   | L:   $49d^4 + 121{,}8d^2s^2 + 75{,}69s^4$      $= (7d^2 + 8{,}7s^2)^2$
h) $29{,}16q^4 + 118{,}8q^2$   | L:   $29{,}16q^4 + 118{,}8q^2 + 121$      $= (5{,}4q^2 + 11)^2$
i) $1{,}69a^4m^2 - 24{,}7a^2m$   | L:   $1{,}69a^4m^2 - 24{,}7a^2m + 90{,}25$      $= (1{,}3a^2m - 9{,}5)^2$
j) $10{,}89d^4 + 25{,}74d^2k$   | L:   $10{,}89d^4 + 25{,}74d^2k + 15{,}21k^2$      $= (3{,}3d^2 + 3{,}9k)^2$

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| **4** | Bitte bringen Sie's in die Form $(\square+\square)(\square+\square)$: |

a) $30g^2imty^2 + 54g^2it - 5my^2 - 9$   | L:   $(6g^2it - 1)(5my^2 + 9)$
b) $7c^2e^2hr^2 - 4e^2 + 7c^2hr^2 - 4$   | L:   $(-e^2 - 1)(-7c^2hr^2 + 4)$
c) $45ahit^2x^2 - 5aht^2z + 18e^2hinx^4 - 2e^2hnx^2$   | L:   $(5at^2 + 2e^2nx^2)(9hix^2 - hz)$
d) $-18be^3r + 66be^2 + 15efr^2 - 55fr$   | L:   $(-6be^2 + 5fr)(3er - 11)$
e) $3es + 36em^2 - 4s - 48m^2$   | L:   $(3e - 4)(s + 12m^2)$
f) $-50a^4c^3 - 35a^2c^2 - 20a^4c^2f^2 - 14a^2cf^2$   | L:   $(-5a^2c - 2a^2f^2)(10a^2c^2 + 7c)$
g) $-30a^3j^3 - 6a^2j^3 - 5aj - j$   | L:   $(-6a^2j^2 - 1)(5aj + j)$
h) $5stz + 40z + 2mq^2stz + 16mq^2z$   | L:   $(-5z - 2mq^2z)(-st - 8)$
i) $6h^3 - 7h^4y^2 - 6h + 7h^2y^2$   | L:   $(-h^2 + 1)(-6h + 7h^2y^2)$
j) $-3j^2k^2qv^2 + 2j^2k^2v^2 + 3kq - 2k$   | L:   $(-j^2k^2v^2 + k)(3q - 2)$