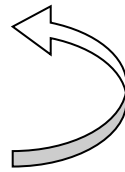


2. Bez

Verkettungen

Lösungen AB 9

1. ggT ausklammern
2. ist es ein Binom?
3. geht Summe-Produkt-Regel?
4. Faktoren nochmals überprüfen



Beispiel: $2x^5 - 12x^3 - 54x$ \rightarrow 1.
 $= 2x(x^4 - 6x^2 - 27)$ \rightarrow 3. und 4.
 $= 2x(x^2 + 3)(x^2 - 9)$ \rightarrow 2.
 $= \underline{\underline{2x(x^2 + 3)(x + 3)(x - 3)}}$

1. $3a^2 - 3 = 3(a^2 - 1) = 3(a + 1)(a - 1)$
2. $a^4 - a^2 = a^2(a^2 - 1) = a^2(a + 1)(a - 1)$
3. $5a^2 - 20 = 5(a^2 - 4) = 5(a + 2)(a - 2)$
4. $3a^2 + 6a + 3 = 3(a^2 + 2a + 1) = 3(a + 1)(a + 1)$
5. $5b^3 - 5b = 5b(b^2 - 1) = 5b(b + 1)(b - 1)$
6. $a^2b - 2ab + b = b(a^2 - 2a + 1) = b(a - 1)(a - 1)$
7. $9c^3 - 36c = 9c(c^2 - 4) = 9c(c + 2)(c - 2)$
8. $6s^2 - 6 = 6(s^2 - 1) = 6(s + 1)(s - 1)$
9. $2x^2 - 4x + 2 = 2(x^2 - 2x + 1) = 2(x - 1)(x - 1)$
10. $27d^2 + 18d + 3 = 3(9d^2 + 6d + 1) = 3(3d + 1)(3d + 1)$
11. $3a^2 - 12b^2 = 3(a^2 - 4b^2) = 3(a + 2b)(a - 2b)$
12. $2x^2 + 4xy + 2y^2 = 2(x^2 + 2xy + y^2) = 2(x + y)(x + y)$
13. $5 + 50c + 125c^2 = 5(1 + 10c + 25c^2) = 5(1 + 5c)(1 + 5c)$
14. $d^4 - 16 = (d^2 + 4)(d^2 - 4) = (d^2 + 4)(d + 2)(d - 2)$
15. $wx^2 - 2wxy + wy^2 = w(x^2 - 2xy + y^2) = w(x - y)(x - y)$
16. $20m^2 + 20m + 5 = 5(4m^2 + 4m + 1) = 5(2m + 1)(2m + 1)$
17. $c^4 - 13c^2d^2 + 36d^4 = (c^2 - 4d^2)(c^2 - 9d^2) = (c + 2d)(c - 2d)(c + 3d)(c - 3d)$
18. $a^3b - ab^5 = ab(a^2 - b^4) = ab(a + b^2)(a - b^2)$
19. $12xy^2 - 27x^3 = 3x(4y^2 - 9x^2) = 3x(2y + 3x)(2y - 3x)$
20. $9h^2i^4 + 6h^2i^2 + h^2 = h^2(9i^4 + 6i^2 + 1) = h^2(3i^2 + 1)(3i^2 + 1)$
21. $x^4 - y^4 = (x^2 + y^2)(x^2 - y^2) = (x^2 + y^2)(x + y)(x - y)$
22. $28t^4 + 84t^3 + 63t^2 = 7t^2(4t^2 + 12t + 9) = 7t^2(2t + 3)(2t + 3)$