

Termumformungen II: Höhere Potenzen von Binomen

Lösungen

1. $8x^3 + 12x^2 + 6x + 1$
2. $-27a^3 + 27a^2 - 9a + 1$
3. $8a^3 + 60a^2b + 150ab^2 + 125b^3$
4. $-a^3 + 12a^2b - 48ab^2 + 64b^3$
5. $-a^3 - 6a^2b - 12ab^2 - 8b^3$
6. $u^3 + 0.3u^2 + 0.03u + 0.001$
7. $-1.728r^3 + 21.6r^2s - 90rs^2 + 125s^3$
8. $a^3(\frac{1}{8}b^3 + \frac{1}{2}b^2 + \frac{2}{3}b + \frac{8}{27})$
9. $x^3(\frac{2744}{125}x^3 + \frac{84}{5}x^2 - \frac{30}{7}x + \frac{125}{343})$
10. $\frac{1}{1000}(8x^3 - 60x^2y + 150xy^2 - 125y^3)$
11. $x^3y^3(8x^3 + 12x^2y + 6xy^2 + y^3)$
12. $a^6b^6(\frac{125}{729}a^3 - \frac{5}{9}a^2b + \frac{3}{5}ab^2 - \frac{27}{125}b^3)$
13.
$$\begin{aligned}(a+b)(a+b)^4 &= (a+b)(a^4 + 4a^3b + 6a^2b^2 + 4ab^3 + b^4) \\ &= a^5 + 5a^4b + 10a^3b^2 + 10a^2b^3 + 5ab^4 + b^5 \\ (a+b)^2(a+b)^3 &= (a^2 + 2ab + b^2)(a^3 + 3a^2b + 3ab^2 + b^3)\end{aligned}$$
14. $16a^4 + 32a^3 + 24a^2 + 8a + 1$
15. $x^5 - 15x^4y + 90x^3y^2 - 270x^2y^3 + 405xy^4 - 243y^5$
16. $x^7 - 7x^6y + 21x^5y^2 - 35x^4y^3 + 35x^3y^4 - 21x^2y^5 + 7xy^6 - y^7$