

Dividing Polynomials 3 – Synthetic Division

Simplify each of the following using synthetic division.

1. $(x^3 + 7x^2 + 5x - 21) \div (x + 3)$
2. $(x^4 - 2x^3 - 12x^2 + 19x - 12) \div (x - 4)$
3. $(x^4 + 6x^3 + x^2 - 25x + 12) \div (x + 4)$
4. $(x^4 - 9x^3 + 15x^2 - 7x) \div (x - 7)$
5. $(x^5 - 6x^4 + x^3 - 13x^2 + 48x - 36) \div (x - 6)$
6. $(x^5 + 8x^4 + 10x^3 + 3x^2 + 8x - 12) \div (x + 2)$
7. $(x^4 - 8x^3 + x^2 - 5x - 24) \div (x - 8)$
8. $(x^4 - 2x^3 - 2x^2 - 2x - 3) \div (x - 3)$
9. $(x^6 + 7x^5 + 5x^4 - 27x^3 - 3x^2 - 24x + 16) \div (x + 4)$
10. $(x^3 - 2x^2 - 29x - 42) \div (x - 7)$
11. $(x^4 + 3x^3 - 2x^2 + 13x - 7) \div (x + 4)$
12. $(x^4 + 3x^3 + 2x^2 + 7x + 6) \div (x + 3)$
13. $(x^4 + 3x^3 - x^2 + 7x - 6) \div (x - 2)$
14. $(x^5 - 2x^4 + 7x^3 - 2x^2 + 13x - 19) \div (x - 1)$
15. $(x^4 + 8x^3 + 5x^2 - 74x - 119) \div (x + 4)$
16. $(x^2 + x - 7) \div (x + \frac{1}{2})$
17. $(\frac{2}{3}x^3 + \frac{7}{4}x^2 + \frac{21}{3}x + 1) \div (x - \frac{1}{3})$
18. $(9x^4 + 12x^3 + 7x^2 - 19x - 14) \div (3x + 2)$
19. $(2x^4 + 9x^3 + 24x^2 + 23x - 30) \div (2x + 5)$
20. $(3x^4 + 5x^3 + 3x^2 - 16x + 35) \div (3x + 5)$
21. $(x^3 + x - 7) \div (x + 4)$
22. $(2x^3 - 5x^2 + x - 28) \div (2x - 7)$
23. $(x^4 - 3x^2 + 7x - 16) \div (x - 5)$
24. $(x^5 - x^2 + 3x - 7) \div (x + 3)$
25. $(3x^5 + 25x^4 + 28x^3 + 2x^2 - \frac{28}{3}x - 16) \div (3x + 4)$
26. $(3x^5 - 2x^4 + 7x^2 + 6) \div (x + 3)$
27. $(5x^3 + 2x^2 - 7) \div (4x + 3)$