

Simplify each of the following expressions using synthetic division or tabular/long division.

1. $(2x^2 + 3x - 44) \cdot (x - 4)^{-1}$

$$2x + 11$$

2. $(2x^4 + x^3 + 2x^2 + 16x - 38) \cdot (2x + 5)^{-1}$

$$x^3 - 2x^2 + 6x - 7 + \frac{-3}{2x + 5}$$

3. $\frac{(x^4 + x^3 - 7x^2 + 17x - 12)}{(x^2 + 3x - 4)}$

$$x^2 - 2x + 3$$

4. $(5x^4 + 14x^3 + 9x^2 + 42x + 11) \div (x + 3)$

$$5x^3 - 1x^2 + 12x + 6 + \frac{-7}{x+3}$$

5. $\frac{(8x^4 - 34x^3 + 17x^2 + 11x - 6)}{(4x - 3)}$

$$2x^3 - 7x^2 - 1x + 2$$

6. $(x^4 - 6x^3 - 46x - 21) \div (x - 7)$

$$x^3 + 1x^2 + 7x + 3$$

7. $(9x^3 + 10x^2 - 17x + 12) \div (x + 2)$

$$9x^2 - 8x - 1 + \frac{14}{x+2}$$

8. $\frac{(2x^3 + 3x^2 - 39x - 20)}{(x - 4)}$

$$2x^2 + 11x + 5$$

9. $(x^4 - x^2 + x - 4) \div (x^2 - 2x + 5)$

$$x^2 + 2x - 2 + \frac{-13x + 6}{x^2 - 2x + 5}$$

10. $\frac{(14x^5 - 9x^4 - 11x^3 - 22x^2 - 38x - 16)}{7x + 6}$

$$2x^4 - 3x^3 + 1x^2 - 4x - 2 + \frac{-4}{7x+6}$$