

Polynomial Division

#6

Simplify each of the following expressions using synthetic division for five problems and tabular/long division for five problems – you choose. If the divisor is a factor, find the remaining roots.

1. $(x^2 + 4x + 4) \div (x + 2)$

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

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

4. $(5x^4 + 14x^3 + 9x^2 + 42x + 18) \div (x + 3)$

5. $(x^2 + 7x + 6) \cdot (x + 6)^{-1}$

6. $(4x^3 - 7x^2 - 15x) \div (x^2 - 3x)$

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

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

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

10. $(x^4 - 6x^3 - 46x - 21) \cdot (x - 7)^{-1}$