Dividing Polynomials Using Synthetic Division

Use synthetic division to divide the polynomial by the linear factor.

1. $(3x^2 + 7x + 2) \div (x + 2)$

2. $(2x^2 + 7x - 15) \div (x + 5)$

3. $(7x^2 - 3x + 5) \div (x + 1)$

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

5. $(3x^2 + 4x - x^4 - 2x^3 - 4) \div (x + 2)$

6. $(3x^2 - 4 + x^3) \div (x - 1)$

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

8. $(x^4 + 9) \div (x + 3)$

9. $(x^4 - 16) \div (x + 2)$

10. $\dfrac{x^6 + 4x^5 - 2x^3 + 7}{x + 1}$