Algebra II Notes/Classwork Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Introduction to Synthetic Division of Polynomials Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Warm-up:** Solve$ (2x^{3}-5x^{2}-x+3)÷(x+3)$ using long division.

**Synthetic Division of Polynomials: Examples**



Example 1: $(3x^{3}+4x^{2}-2x-1)÷(x+4)$

Example 2: $(2x^{4}+4x^{2}-1)÷(x-1)$

Synthetic division ONLY works if:

**Classwork/Homework:** Complete the following problems before our next class.



Check your work: your remainders should be 8, -3, 6, 5, 5, 3, -8.

<https://www.khanacademy.org/math/algebra2/arithmetic-with-polynomials/synthetic-division-of-polynomials/v/synthetic-division>

<https://mathbitsnotebook.com/Algebra2/Polynomials/POPolySynDivide.html>