9-4 Division of Polynomials

Objectives:

- I can divide one polynomial by another by using synthetic division

May 14-11:24 AM

Identify the coefficients of the following polynomials

$$f(x) = -5x^3 + 3x^2 - 4x + 7$$

$$f(x) = 2x^3 + 6x - 1$$

Sep 19-1:52 PM

$11\overline{)144}$

Mar 20-9:01 AM

Synthetic Division

- Only uses the coefficients of each term
- Make sure functions written in standard form
- Use 0 as a place holder for any missing terms

Process:

- Write all coefficients in the box
- Bring the first term down
- Multiply on the diagonal
- Add in the columns

Feb 28-11:58 AM

Divide $(x^3+3x^2-4x-12)\div(x-2)$

What makes it zero?

2	1	3	-4	-12
		2	10	12
$\frac{x^3}{x}=x^2 \rightarrow$	1	5	6	0

remainder

x^2+5x+6

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

1	1	4	1	-6
		1	5	6
	1	5	6	0

x^2+5x+6

May 14-11:41 AM

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

2	1	2	0	-3	-6
		2	8	16	26
	1	4	8	13	20

$x^3+4x^2+8x+13+\frac{20}{x-2}$

May 15-11:39 AM

Divide $(x^2+2x+5)\div(x-2)$

2	1	2	5
		2	8
	1	4	13

$x+4+\frac{13}{x-2}$

May 14-11:43 AM

Divide $\left(x^2-28\right)\div\left(x-5\right)$

5	1	0	-28
		5	25
	1	5	$\boxed{-3}$

$x+5-\frac{3}{x-5}$

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