More Polynomial Functions

Consider The following

① $y = -2x^3 + x^2 + 5x + 1$

→ Deg ⇒ 3

→ End beh ⇒ decrease then Q4

→ y-int (0, 1)

→ x-int ⇒ Disgusting

② $y = (x)(x+3)(x-1)^2$

→ Deg = 4

→ End ⇒ inc then Q1

→ y-int (0, 0)

→ x-int $x = 0, -3, 1$

Sep 16-11:39 AM

Long Division

① $4 \overline{)583}$

145

$-\ 4\downarrow$

18

$-\ 16$

23

20

$3R$

$145\ \frac{3}{4}$

Sep 16-11:46 AM

#2

$$x+2\overline{)\,x^3+3x^2-4x+1}\qquad x^2+x-6$$

$$-(x^3+2x^2)$$

$$x^2-4x$$

$$-(x^2+2x)$$

$$-6x+1$$

$$-(-6x-12)$$

$$13\ R$$

Sep 16-11:50 AM

#3

$$x-4\overline{)\,3x^2-11x-4}\qquad 3x+1$$

$$-(3x^2-12x)$$

$$1x-4$$

$$-(1x-4)$$

$$0R$$

Sep 16-11:53 AM

#4 $x-1\overline{)x^{42}+6x^{40}-3x^{20}+7}$

Synthetic Division

BACK to #2

$x+2\overline{)x^3+3x^2-4x+1}$ $\Rightarrow -2$

1	3	-4	1
	-2	-2	12
1	1	-6	13R

Depressed Equation $\rightarrow 1x^2+1x-6$

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

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Tomte

$x+3\overline{)4x^3-5x^2+2x-1}$

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