

Review Chapter 5

Polynomials

$$(-3x^2 + 7x - 7) + (8x^2 + 4 + 8x)$$

$$-3x^2 + 7x - 7 + 8x^2 + 4 + 8x$$

$$5x^2 + 15x - 3$$

Quadratic
Trinomial

$$(-7 - 5r^3 + 2r^4) - (6r^4 - 7 - 2r^3)$$

~~-7~~ -5r³ + 2r⁴ - 6r⁴ ~~+7~~ + 2r³
 -3r³ - 4r⁴
 -4r⁴ - 3r³

Quartic binomial

$$(3v^2 - 7v - 1)(8v^2 - 7v + 8)$$

$$\begin{aligned} & 24v^4 - 21v^3 + 24v^2 \\ & - 56v^3 + 49v^2 - 56v \\ & - 8v^2 + 7v - 8 \end{aligned}$$

$$24v^4 - 77v^3 + 65v^2 - 49v - 8$$

Quartic w/ 5 terms

$$(r^3 - 9r^2 - 8r - 16) \div (r - 10) \quad \begin{matrix} r^2 \cdot r = r^3 \\ -r = r^2 \end{matrix}$$

$$r^2 + r + 2 + \frac{4}{r-10}$$

$$r-10 \overline{) \begin{array}{r} r^3 - 9r^2 - 8r - 16 \\ \underline{-r^3 + 10r^2} \\ 2r^2 - 8r - 16 \\ \underline{-2r^2 + 10r} \\ 2r - 16 \\ \underline{-2r + 20} \\ 4 \end{array}}$$

$$f(x) = \underline{x^3} + 6\underline{x^2} + 8\underline{x}$$

$$x(x^2 + 6x + 8) = 0$$

$$x = 0$$

$$x^2 + 6x + 8 = 0$$

$$(x + 2)(x + 4) = 0$$

$$x + 2 = 0 \quad x + 4 = 0$$

$$x = -2 \quad x = -4$$

$$x = 0, -2, -4$$

$$\begin{array}{r} 8 \\ 2 \times 4 \\ \hline 8 \end{array}$$

$$x(x^2 + 6x + 8) = 0$$

$$x = 0 \quad x^2 + 6x + 8 = 0$$

$$\frac{-6 \pm \sqrt{36 - 4(1)(8)}}{2}$$

$$\frac{-6 \pm \sqrt{4}}{2} = \frac{-6 \pm 2}{2}$$

$$\frac{-6 + 2}{2} = -2 \quad \frac{-6 - 2}{2} = -4$$

$$x = 0, -2, -4$$

$$f(n) = n^3 + 10n^2 + 30n + 24 \text{ at } n = -4$$

$$(-4)^3 + 10(-4)^2 + 30(-4) + 24$$

$$-64 + 160 - 120 + 24$$

$$0$$

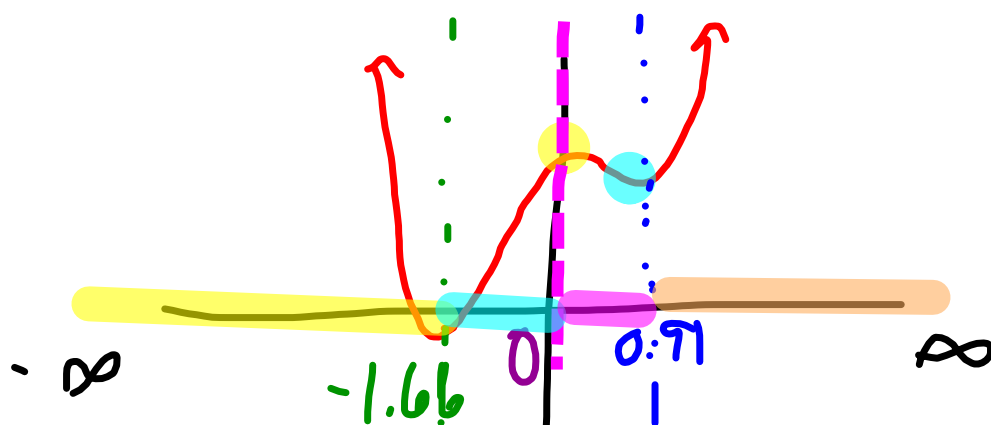
-4 is a root

X	Y
-4	0

$$(2n^3 - 22n^2 + 61n - 14) \div (\underline{n - 6})$$

$$\begin{array}{r} \underline{6} \overline{) \quad 2 \quad -22 \quad 61 \quad -14} \\ \quad \downarrow \quad 12 \quad -60 \quad 6 \\ \hline 2 \quad -10 \quad 1 \quad \underline{-8} \\ \hline \end{array}$$
$$2x^2 - 10x + 1 + \frac{-8}{n-6}$$

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



inc $(-1.66, 0) \cup (0.91, \infty)$

dec $(-\infty, -1.66) \cup (0, 0.91)$

