

2/24/2020

6.1 Properties of Exponents

product of powers

$$2^3 \cdot 2^4 = 2^7$$

$$2^7$$

power of powers

$$(2^3)^4 = 2^{12}$$

Negative Exponents

$$3^{-2} = \frac{1}{3^2} = \frac{1}{9}$$

Quotient power

$$\frac{3^6}{3^3} = 3^3 = 3 \cdot 3 \cdot 3$$

Power Quotient

$$\left(\frac{4}{5}\right)^3 = \frac{4^3}{5^3}$$

$$\frac{(3^3)^3}{3^6} = \frac{3^9}{3^6} = 3^3$$

$$\boxed{496} = \overline{9} \cdot \overline{6} \cdot \overline{4}$$

$$= \overline{9} \cdot \overline{6} \cdot \overline{4}$$

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(7) (2) (1) (I)
 (2) (3) (2) (I)
 (2) (5) (2) (I)

(7) (2) (1) (I)

$$\overline{S} = \frac{r^2 \cdot S_{10}}{r^{1.2} \cdot S^{-5.2}}$$

$$= \frac{r^2 \cdot S_{10}}{r^{1.2} \cdot S^{-5.2}}$$

$$= \frac{r^2 \cdot S_{10}}{r^{1.2} \cdot S^{-5.2}}$$

CWK: $\frac{326}{1-47}$ pg. #1-47
 odds

$$\frac{X_1}{y_5}$$

$$\frac{X_1}{1 \cdot y_5} =$$

$$\frac{X_1}{1 \cdot y_4} =$$

$$\frac{X_1 \cdot y_{-1}}{1 \cdot y_4} =$$

$$\frac{X_2 \cdot y_{-1}}{X_1 \cdot y_4} =$$

(1.2) $\frac{2}{4}$ (2.2) $\frac{4}{4}$

$$\frac{X_3 \cdot y_{-1}}{(X_1 \cdot y_2)^2}$$

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2/26/2020

6.2 Evaluating & Graphing Polynomial Functions

Polynomial function: function written with positive exponents

ex $3x^3 + 2x^2 + 4$

Leading Coefficient

Constant

largest degree

(degree) (power)

Descending order: (powers get smaller from left to right)

Constant function
 (0 degree)
 * (0 degree) equals 1
 (ex) $f(x) = 3$

Quadratic function
 (2nd degree)
 $f(x) = x^2 + 2$

Linear function
 (1st degree)
 (ex) $f(x) = 3x + 2$

Cubic function
 (3rd degree)
 $f(x) = 3x^3 + 2x + 1$

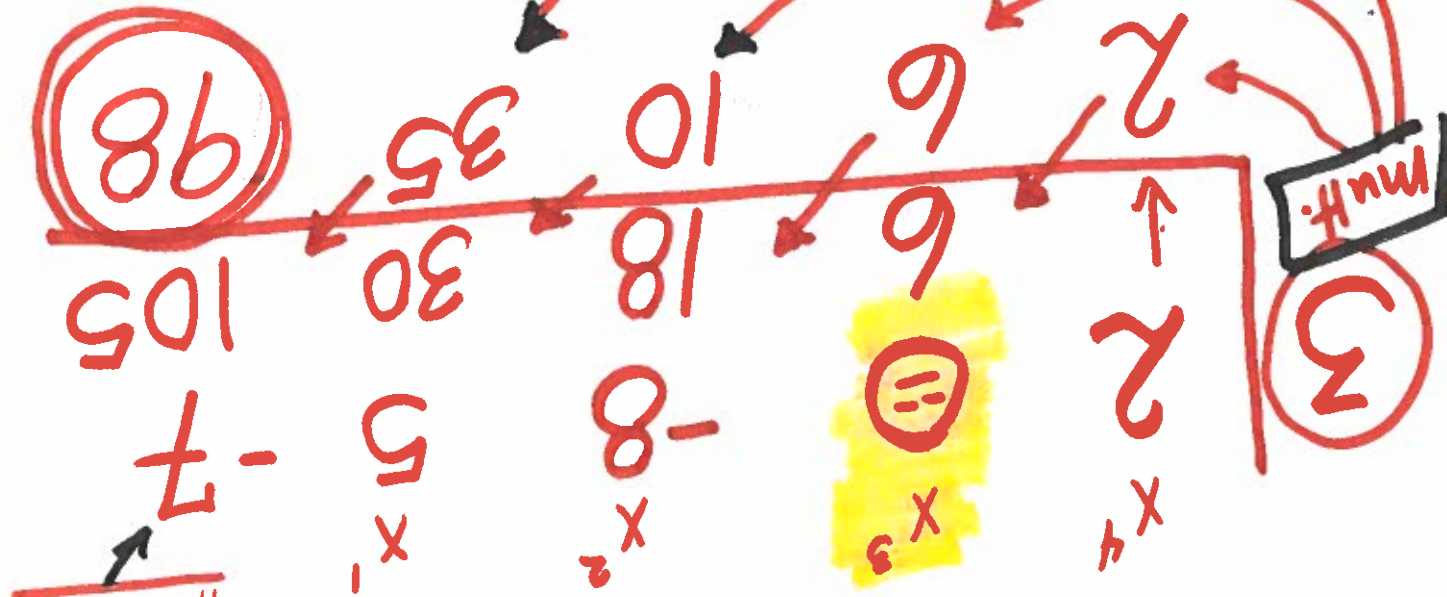
Quartic function
 4th Degree
 $f(x) = 3x^4 + 2x^3 + 3$

Free Space

P2 Synthetic Substitution

let $f(x) = 2x^4 - 8x^2 + 5x - 7$;

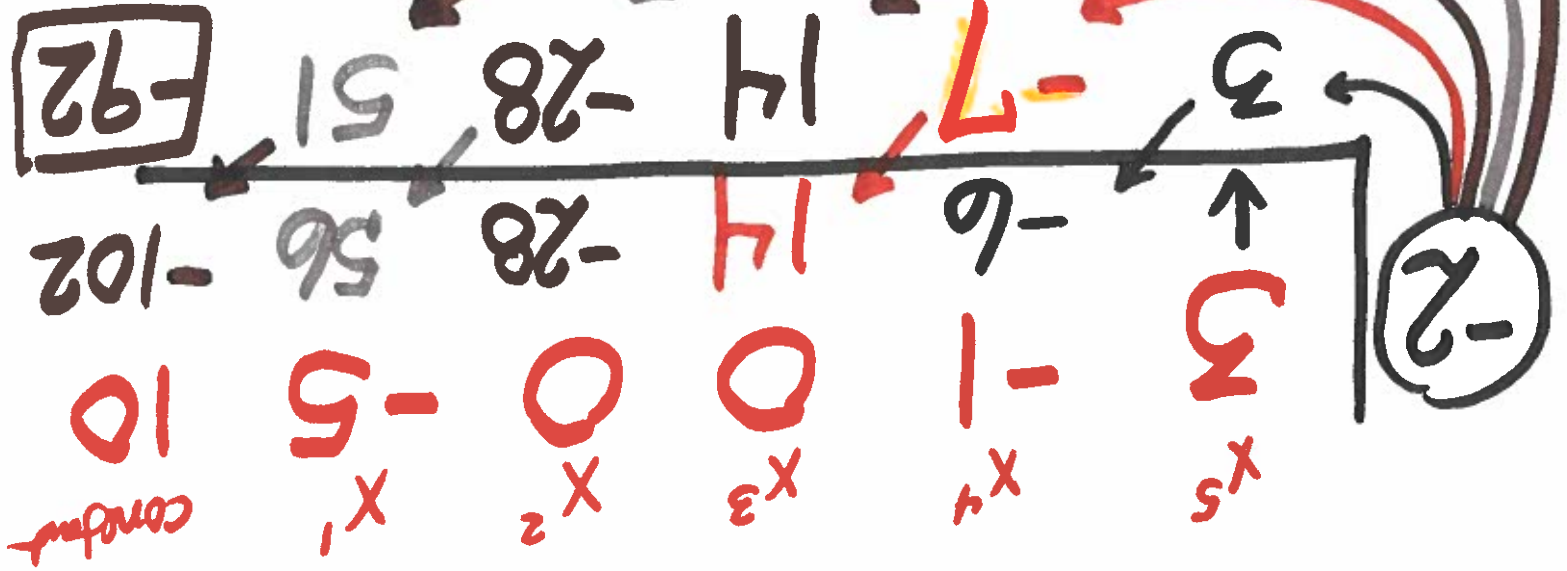
When $X = 3$



$X = 3$
 $y = 98$

mult.
3

$f(x) = 3x^5 - 5x^4 - 5x + 10!$
 When $x = -2$



$x = -2$
 $y = -92$

Mr. Cox's Grade Check Week of: _____

Name: _____ Grade: _____ Date: _____

Classes	# of Missing Assignments	Current Grade
0.		
1.		
2.		
3.		
4.		
5.		
6.		
7.		

Student Name: _____

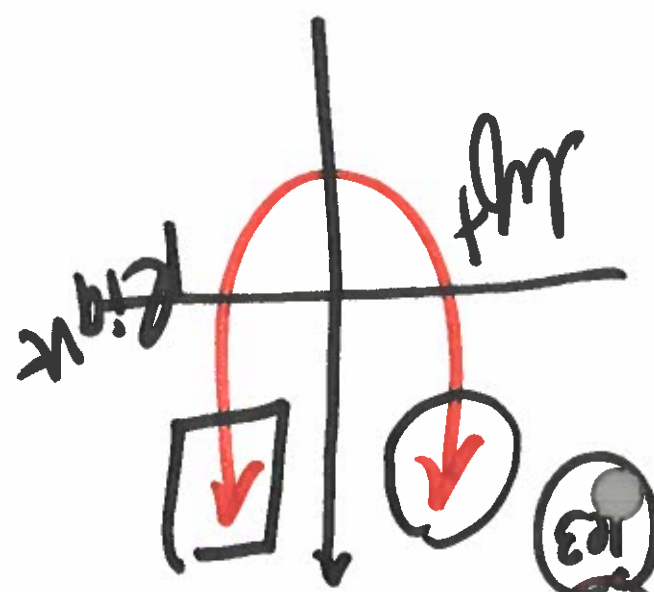
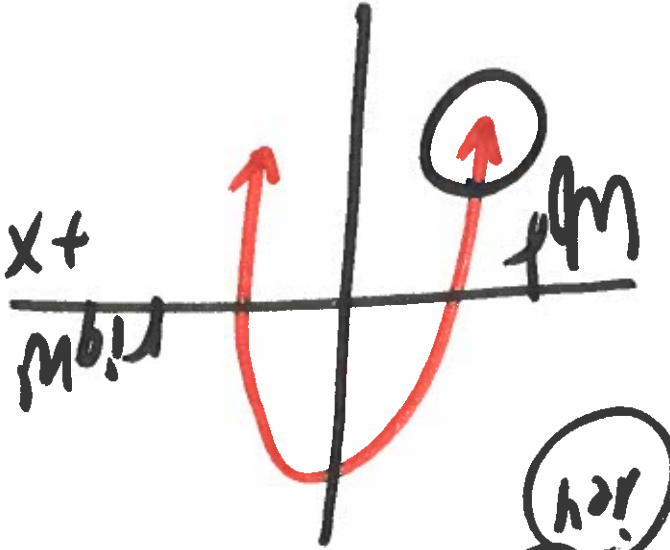
Parent/Guardian Name: _____

Student Signature: _____

Parent/Guardian Signature/Date: _____

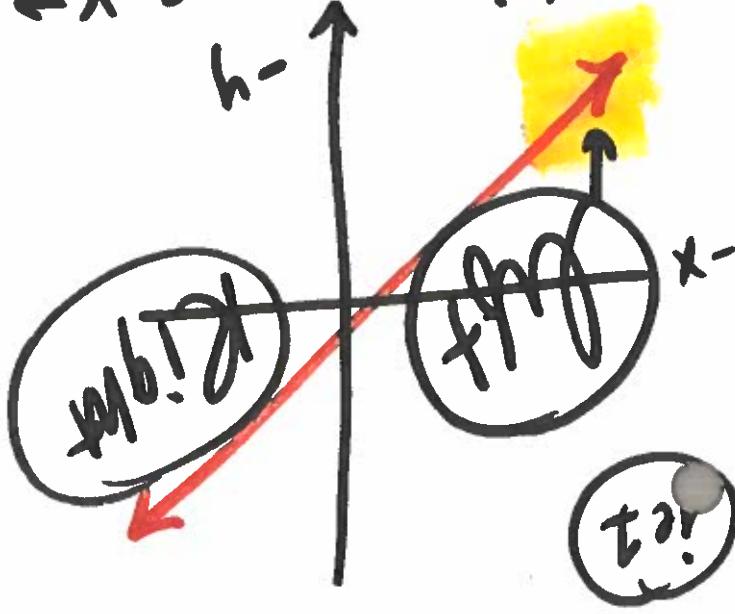
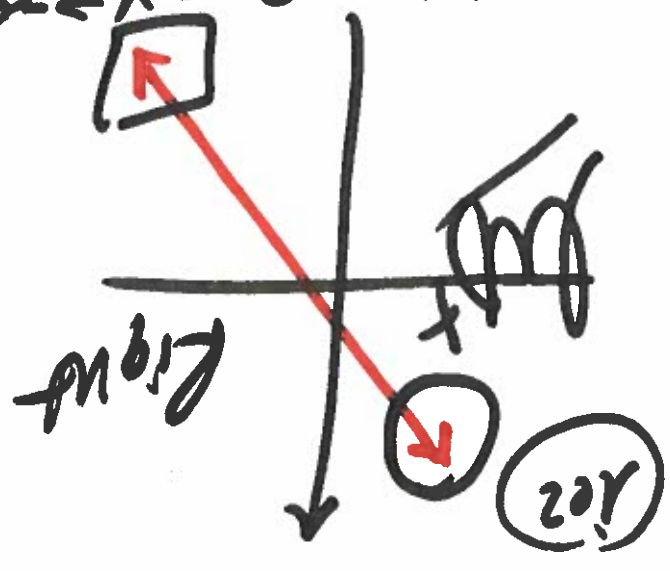
(W.K. 333 #1-47 odds)

$\infty \rightarrow +\infty$ $X \rightarrow +\infty$ $f(x) \rightarrow \infty$ (R) $f(x) \rightarrow \infty$ (R)
 $\infty \rightarrow -\infty$ $X \rightarrow -\infty$ $f(x) \rightarrow \infty$ (L) $f(x) \rightarrow -\infty$ (L)



$\infty \rightarrow +\infty$ $X \rightarrow \infty$ $f(x) \rightarrow \infty$ (R) $f(x) \rightarrow \infty$ (R)
 $\infty \rightarrow -\infty$ $X \rightarrow \infty$ $f(x) \rightarrow -\infty$ (L) $f(x) \rightarrow -\infty$ (L)

$\infty \rightarrow +\infty$ $X \rightarrow \infty$ $f(x) \rightarrow +\infty$ (R) $f(x) \rightarrow +\infty$ (R)
 $\infty \rightarrow -\infty$ $X \rightarrow -\infty$ $f(x) \rightarrow -\infty$ (L) $f(x) \rightarrow -\infty$ (L)



3/4/2020

6.3 Adding, Subtracting, Multiplying polynomials

P1 Adding Polynomials
Vertically: horizontally

$$\begin{array}{r}
 (1) \quad 3x^3 + 2x^2 - x - 7 \\
 + \quad x^3 - 10x^2 + 8
 \end{array}$$

$$\underline{4x^3 - 8x^2 - x + 1}$$

$$-x^3 + 5x^2 - 2x - 12$$

$(x-3)(-x^2+2x+4)$
 mult.

~~$x^3 + 2x^2 + 4x$~~
 ~~$+ 3x^2 + 6x - 12$~~

$$6x^3 - 9x^2 - 1x + 8$$

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

[act]
 $8x^3 - 3x^2 - 2x + 9$

(p2) Subtracting

Dear Parents/Guardians:

I am preparing for **Parent-Teacher Conferences Thursday, March 12, 2020.** Conference times will be **from 1:20-5:40 PM.**

Please contact me and include your name, your child's name, and 3 conference times that will work for your schedule.

Thank you for your continued support and partnership in educating the students at Superior Junior/Senior High.

Open Times as of 2/27/2020 (Just as before, please respond as soon as possible since time slots fill up fast.)

1:20	1:40
2:00	2:20
2:40	3:00
3:20	3:40
4:00	4:20
4:40	5:00
5:20	5:40

Sincerely,

Mr. Jeff J. Cox

Math Teacher

Superior High School

Email: jcox@superiorsd.org

Phone: 520-689-3119

Free Calculator: <https://www.desmos.com/>

Mr. Cox's Webpage: <http://mrjeffjcox.weebly.com>

Special Patterns:

$$(X+3)(X-3) = (X^2 - 9)$$

(conjugates)

Square of a Binomial:

$$(a+b)^2 = a^2 + 2ab + b^2$$
$$(a-b)^2 = a^2 - 2ab + b^2$$

Cube of a Binomial:

$$(a+b)^3 = a^3 + 3a^2b + 3ab^2 + b^3$$
$$(a-b)^3 = a^3 - 3a^2b + 3ab^2 - b^3$$

pgs. 341-342
1-49 odds

$$X^3 + 3X^2 + 3X + 1$$

$$(X+1)^3 = X^3 + 3X^2 + 3X + 1$$

3/6/2020

6.4 Factoring & Solving Polynomial Equations:

$$2x^2 - 5x - 12$$

$$(2x + 3)(x - 4)$$

$$+3x - 8x$$

$$-5x$$

$$(x^2 + 10x + 25) \\ (x + 5)(x + 5) \\ (x + 5)^2$$

General Trinomial:

Perfect Square:

Sum of 2 cubes: $(a^3 + b^3) = (a+b)(a^2 - ab + b^2)$

$6x^2 - 15x$
 $3x(2x - 5)$
GCF

Greatest Common Factor (GCF)

$4x^2 - 16$
 $(2x - 4)(2x + 4)$
 (conjugates)

Difference of 2 Squares:

Difference of 2 cubes:

$$(a^3 - b^3) = (a - b)(a^2 + ab + b^2)$$

Factoring Cubes:

$$x^3 + 27 \quad \boxed{\text{re 1}}$$

$$\frac{x^3 + 3}{3}$$

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

$$(x+3)(x^2 - 3x + 9)$$

Grouping 4 terms:

$$\boxed{\text{ex 1}} \quad \underline{\underline{x^3 - 2x^2 - 9x + 18}}$$

$$x^2(x-2) - 9(x-2)$$

$$(x^2 - 9)(x - 2)$$

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

$$(3, 0) (-3, 0) (2, 0)$$

x-1

③ Factoring Trinomials:

$$2x^5 - 14x^3 + 24x = 0$$

① GCF

②

$$2x(x^4 - 7x^2 + 12) = 0$$

③ trinomial

$$2x(x^2 - 4)(x^2 - 3)$$

④ Grouping

⑤ perfect squares

$$-4x^2 - 3x^2$$

$$-7x^2$$

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

conjugates

work: pgs. 348-349 #1-31 odds

3/9/2020

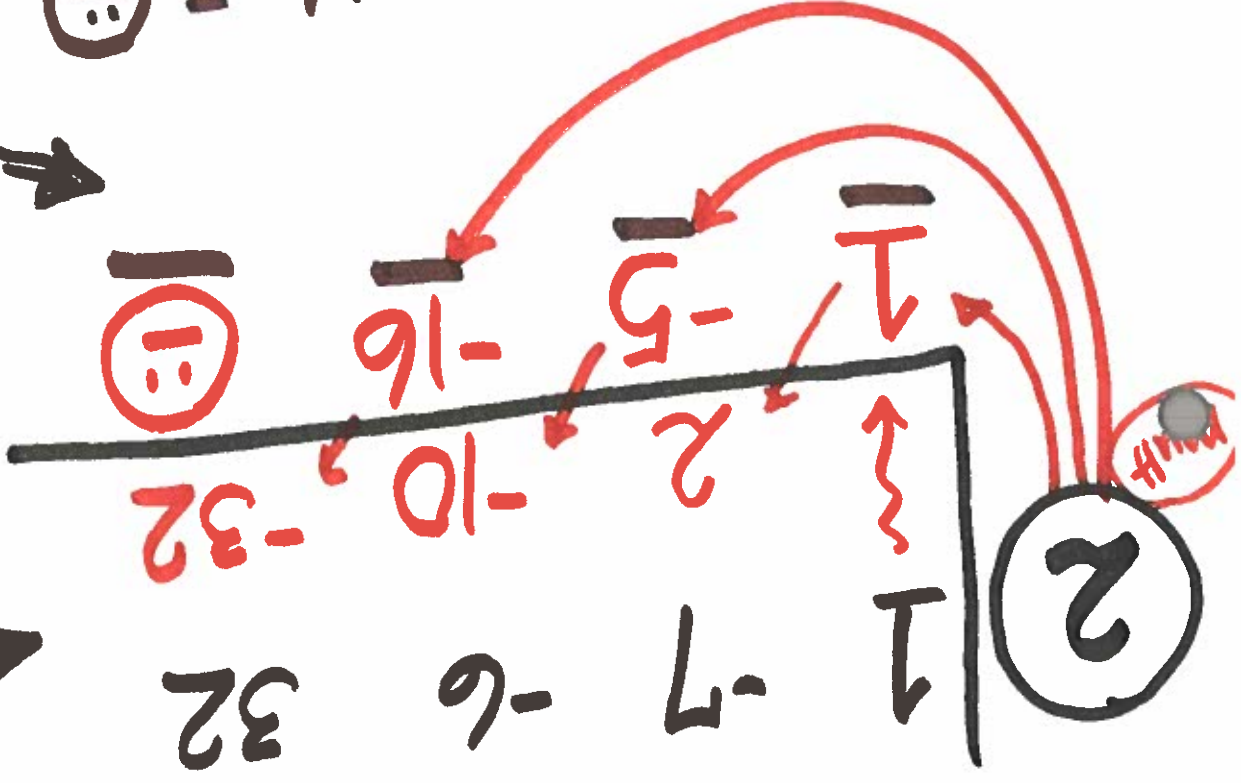
6.5 Synthetic Division

!ac 1 $(x^3 - 7x^2 - 6x + 32) \div (x - 2)$

dividend

divisor

① Make sure powers descending order (none missing)



② $x - 2 = 0$
 $x = 2$

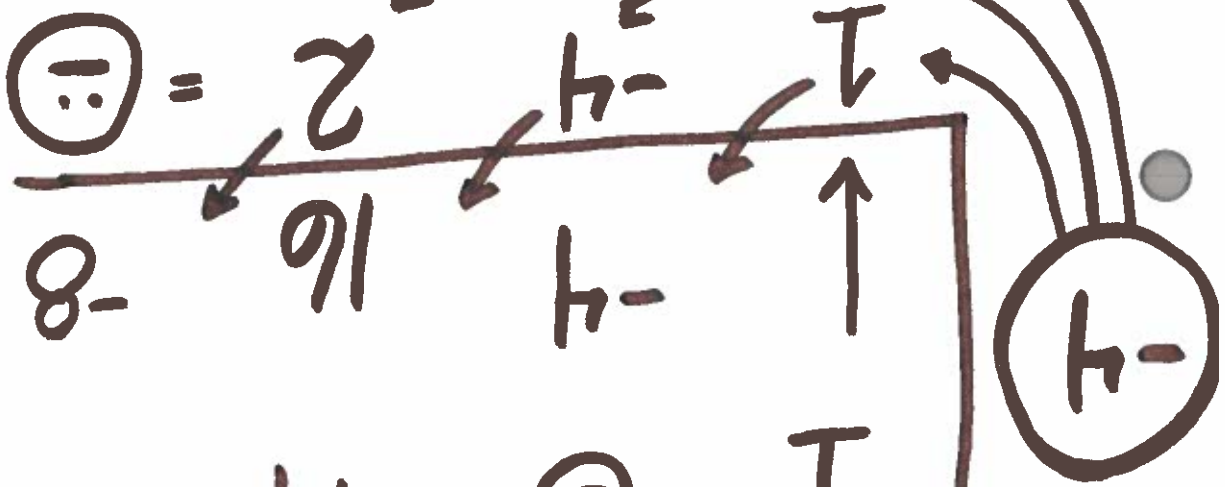
③ write answer with 1 less power than original

$(x^2 - 5x - 16) = 0$

$$0 = x^2 + 4x + 2 = 0$$

$$0 = x^2 + 4x + 2 = 0$$

③



②



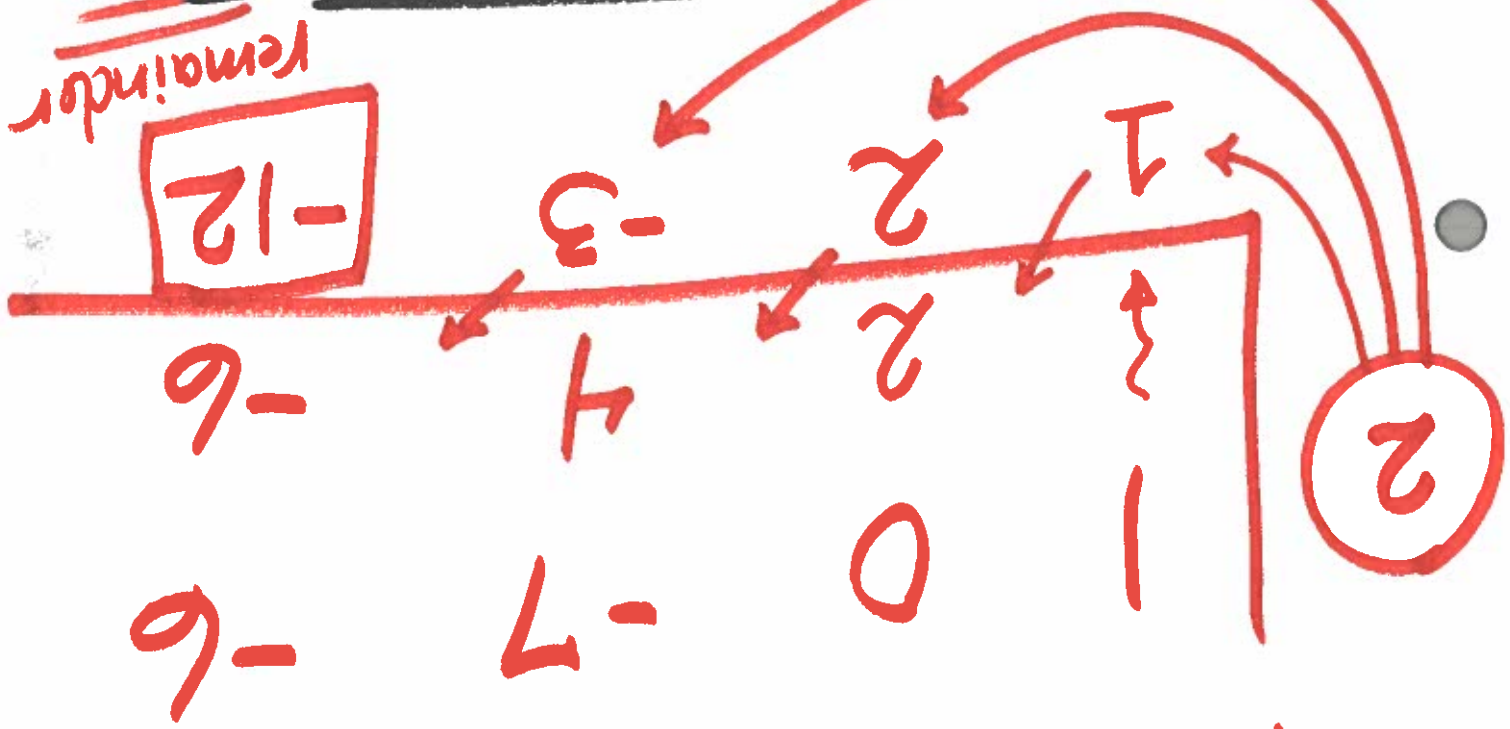
①

$$x^3 + \text{Ⓜ}x^2 - 14x + 8$$

$$\text{Ⓜ}x^3 - 14x + 8 \div (x + 4)$$

remainder / divisor

$$(1x^2 + 2x - 3 - \frac{12}{x-2})$$



$$1x^3 + 0x^2 - 7x - 6$$

1x3

$$(x^3 - 7x - 6) \div (x - 2)$$