

Last time

• $\begin{array}{r} 1 \\ 1 \end{array} \triangleleft$, base: 60

- $\frac{1}{2}, \frac{1}{4}, \dots$ \rightsquigarrow Babylonian.
- Addition / multiplication
- Disadvantage: Lack of zero

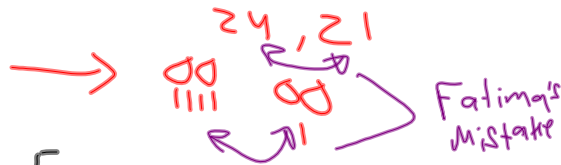
Division: Decimal 107 $\overline{) 5}$

Example: Divide $1 \overbrace{\text{oooo}}^{\text{1,47}}$ by IIII by 5

Step 1: Find the reciprocal of 5.

Step 2: Multiply $1,47$ by 12 (1284)

Step 3: Final Answer: change 1284 into Babylonian.



Exercise: $50 \div 40$

§ 3 - Algebra

- Solve quadratic equations of the form $x^2 + bx = c$ using the current method.
- Solve cubic equation of the form $x^3 + bx^2 = c$
- Approximate $\sqrt{2}$ to be $1;24,51,10$

§ 4 - Geometry

- Area & Volume.
- Area of the circle $\approx 3 \cdot 2 \cdot r$
- Pythagorean theorem was also known

Research Project:

To find what they found exactly.

Chapter 3: Greek Mathematics

§ 1 - Introduction to ancient Greek

Location: Greece $\begin{matrix} \rightarrow \text{Sparta} \\ \rightarrow \text{Athens} \end{matrix}$
Time: 400 B.C. - 250 B.C.

Contributions:

- 1- Geometry.
- 2- Formal proof and logic
- 3- Number Theory.
- 4- Mathematical Analysis.
- 5- Applied Mathematics
- 6- Integral calculus.
- 7- Conic Sections (without using Algebra or trigonometry).

Mathematicians

- 1- Aristotle
 - 2- Plato
 - 3- Euclid
 - 4- Thales.
 - 5- Pythagoras.
 - 6- Archimedes.
- \rightarrow Research

§ 2. Greek Symbols

1- Attic System (Egyptian)

Symbol: $\text{I} \quad \Gamma \quad \Delta \quad \text{H} \quad \text{H} \quad \text{H}$
 Value: 1 5 10 50 100 500

Exercise:

718 $\text{H} \text{H} \Delta \Gamma \text{III}$

2- Ionic System

Examples

$\text{PI} = 80 + 9 = 89$

$\sigma \lambda \epsilon = 235$

$973 = \text{XOY}$

• For thousands, we put I before the letter.

$3000 = \text{'Y}$

$\text{'Y} \text{PI} \theta = 3089$

$\text{'Q} \text{X} \text{L} \text{S} = 1614$

• For 10,000 use the letter M

$30,000 = \text{M}$

$80 \text{PI} \text{M} \theta = 80009$

$\text{M} \text{X} \lambda \eta = 10000 \times 7175 + 638$

$= \dots$