09 Sep' 24

**HW:** Money: Collect all US & Indian coins and notes

(1) Algorithms for +, −, ×, ÷ of two numbers
*, /
↳ Sequence of steps

Addition:

(1) Write the numbers one below the other, aligning the units, 10s, 100s.... place values

$$\begin{array}{r} 3 \\ +\ 257 \end{array}$$

(2) From right (units place) to left — repeat (loop)
 (2.1) Add the two numbers, if there is a 'carry' (>10) add to the next higher decimal place.

## Subtraction :

23 − 5 = 18

↓ Minuend ↓ Subtrahend ↓ Difference

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$$\begin{array}{r|l} & 4 \\ \hline 5 & 23 \\ & 20 \\ \hline & 3 \end{array}$$

4 → Quotient

23 → Dividend

5 → Divisor

3 → Remainder

(1) Check that minuend > subtrahend (otherwise add '−' to subtrahend − minuend)

(2) Write minuend on the top and subtrahend below, aligning the decimal places

$$\begin{array}{r} 235 \\ -\ 43 \end{array}$$

(3) Loop for each ~~decimal~~ place starting from units place

(1) subtract bottom value from the top; If the top value < bottom, borrow one from higher decimal place

(3) 43 × 25 = 1075

43 ↓ multiplicand

25 ↘ multiplier

1075 ↘ product

$$\begin{array}{rr}
 & \overset{1}{4}3 \\
\times & 25 \\
\hline
43\times 5 = & 215 \\
43\times 20 = & 860\ + \\
\hline
43\times 25 = & 1075 \\
\hline
\end{array}$$

(4) 43 ÷ 5

43 ↓ Dividend

5 ↓ Divisor

8 → Quotient

3 → Remainder

(1) Check dividend > divisor

$$\begin{array}{r|l}
 & \ \ 187 \\
\hline
23 & 4302 \\
 & 23 \\
\hline
 & \ 200 \\
 & \ 184 \\
\hline
 & \ \ 162 \\
 & \ \ 161 \\
\hline
 & \ \ \ \ 1 \\
\hline
\end{array}$$

$$\begin{array}{r}
23 \\
2 \\
\hline
46 \\
\hline
\end{array}
\qquad
\begin{array}{r}
\overset{2}{2}3 \\
8 \\
\hline
184
\end{array}$$

**HW:** Class 5 AP textbook —

Do 4 examples each of +, −, *, /

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## Types of numbers:

(1) Natural numbers : 1, 2, 3, 4 . . . . . . .

(2) Whole numbers : 0, 1, 2, 3, 4 . . . . . .

→ (3) Integers : . . . −4, −3, −2, −1, 0, 1, 2, 3, 4 . . . .

$\left.\begin{matrix} +0 \\ -0 \end{matrix}\right\}$ both are same

(4) Fractions : $\frac{1}{2}$, $\frac{2}{4}$, $\frac{5}{7}$, $\frac{11}{9}$, $1\frac{2}{3}$

$$2.5 = 2\frac{1}{2}$$

(5) Rational numbers

2.5, −6.7, + 19.43, . . . .

4305.96432523

(6) Irrational numbers

(7) Real numbers, Imaginary numbers

(8) Complex numbers

<u>HW:</u> Remember the types of numbers (chart)