Addition Column Method

1. LINE UP THE H/T/O CORRECTLY.

2. START IN THE ONES COLUMN, ADD THE NUMBERS TOGETHER.

3. REPEAT IN THE TENS COLUMN, THEN THE HUNDREDS COLUMN.

4. REMEMBER TO CARRY INTO THE NEXT COLUMN IF YOUR NUMBER GOES OVER 9.

EXAMPLE

```
    1 2 3           5 5 8
  +  3 4 2        +  1 2 4
    -----           -----
    4 6 5           6 8 2
```

Subtraction
Column Method

1. LINE UP THE H/T/O CORRECTLY.
2. START IN THE ONES COLUMN, SUBTRACT THE BOTTOM NUMBER FROM THE TOP NUMBER.
3. REPEAT IN THE TENS COLUMN, THEN THE HUNDREDS COLUMN.
4. REMEMBER TO BORROW FROM THE NEXT COLUMN IF NEEDED.

EXAMPLE

$$
\begin{array}{r}
3\ 4\ 3 \\
-\ 1\ 2\ 3 \\
\hline
2\ 2\ 0
\end{array}
$$

$$
\begin{array}{r}
\overset{4}{\cancel{5}}\ \overset{1}{5}\ 8 \\
-\ 1\ 7\ 3 \\
\hline
3\ 8\ 5
\end{array}
$$

Multiplication Short Method

1. PLACE YOUR NUMBERS ONE ON TOP OF THE OTHER.

2. MULTIPLY THE BOTTOM NUMBER BY THE NUMBER DIRECTLY ABOVE IT. RECORD THE UNIT IN THE ANSWER BOX AND CARRY THE TENS.

3. REPEAT WITH THE NEXT NUMBER ALONG AND THEN THE NEXT.

4. REMEMBER TO ADD IN THE CARRIED TENS EACH TIME.

EXAMPLE

$$
\begin{array}{r}
2\ 4\ 3 \\
\times\quad 3 \\
\underline{1} \\
7\ 2\ 6
\end{array}
$$

Multiplication Long Method

1. MULTIPLY THE BOTTOM NUMBER BY THE NUMBER DIRECTLY ABOVE IT. RECORD THE UNIT IN THE ANSWER BOX AND CARRY THE TENS. REPEAT WITH THE OTHER DIGITS.

2. ADD A PLACE HOLDER BELOW.

3. USE THE NEXT DIGIT IN THE BOTTOM NUMBER TO MULTIPLY EACH OF THE TOP NUMBERS IN TURN.

4. ADD THE CARRIED DIGITS AS YOU GO ALONG.

5. ADD THE TWO ANSWERS.

EXAMPLE

$$
\begin{array}{r}
1\ 4\ 3 \\
\times\ \ \ 3\ 8 \\
\hline
8\ 4\ 4 \\
4\ 2\ 9\ 0 \\
\hline
5\ 1\ 3\ 4 \\
\end{array}
$$

Division Short Method

1. PLACE THE DIGITS IN THE BUS STOP.
2. DIVIDE THE FIRST DIGIT IN THE BUS STOP BY THE DIGIT OUTSIDE THE BUS STOP.
3. WRITE THE ANSWER ABOVE.
4. REPEAT WITH ALL THE DIGITS INSIDE THE BUS STOP.
5. IF THE NUMBER DOESN'T 'GO IN' THEN CARRY THE DIGIT ACROSS.
6. THIS WORKS WITH DECIMAL NUMBERS TOO!

EXAMPLE

$$2\;1\;0\;4$$
$$4\;\overline{)\;8\;\;4\;\;1\;{}^{1}6}$$

Division
Long Method

1. DIVIDE
2. MULTIPLY
3. SUBTRACT
4. BRING DOWN
5. REPEAT UNTIL YOU GET TO 0 ZERO OR A REMAINDER.
6. CHECK YOUR ANSWER IS SENSIBLE!

EXAMPLE

$$
\begin{array}{r}
2\ 3\quad R1 \\
4\,\overline{)\ 9\ 3} \\
8 \\
\hline
1\ 3 \\
1\ 2 \\
\hline
1
\end{array}
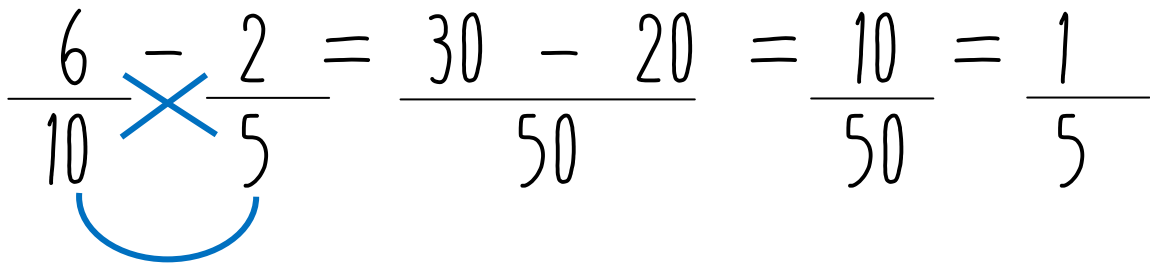$$

2X4

9-4

3X4

13 - 12

Fractions Subtracting

1. IF THE DENOMINATORS ARE THE SAME, SIMPLY SUBTRACT ON NUMERATOR FROM THE OTHER.

EXAMPLE

$$\frac{5}{10} - \frac{3}{10} = \frac{2}{10}$$

1. IF THE DENOMINATORS ARE DIFFERENT THEN USE THE SMILE AND A KISS METHOD.

$$\frac{6}{10} - \frac{2}{5} = \frac{30 - 20}{50} = \frac{10}{50} = \frac{1}{5}$$
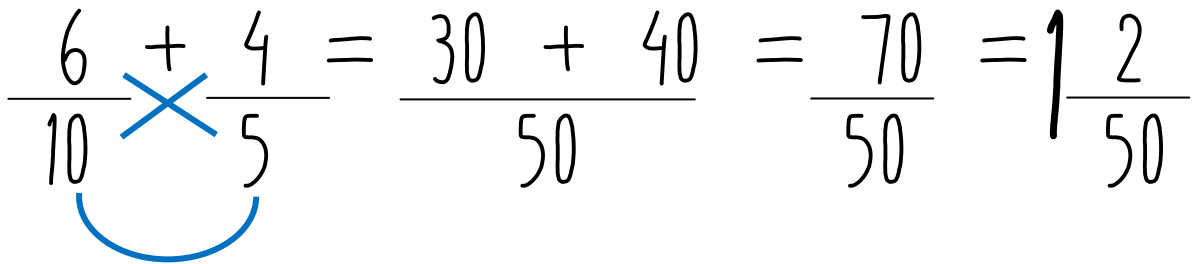
Fractions Adding

1. IF THE DENOMINATORS ARE THE SAME, SIMPLY ADD THE NUMERATOR TOGETHER.

EXAMPLE

$$\frac{5}{10} + \frac{3}{10} = \frac{8}{10}$$

1. IF THE DENOMINATORS ARE DIFFERENT THEN USE THE SMILE AND A KISS METHOD.

$$\frac{6}{10} \times \frac{4}{5} = \frac{30 + 40}{50} = \frac{70}{50} = 1\frac{2}{50}$$

Fractions Multiplying

1. MULTIPLY THE NUMERATORS TOGETHER.

2. MULTIPLY THE DENOMINATORS TOGETHER.

3. SIMPLIFY IF NECESSARY.

EXAMPLE

$$\frac{5}{10} \times \frac{4}{5} = \frac{20}{50} = \frac{2}{5}$$

Fractions Multiplying

1. When multiplying a fraction by a Whole Number you must turn the whole number into a fraction. (The number given is the Numerator, over 1 as the denominator.)

2. Then carry out the multiplication as you normally would: multiply the numerators together and then multiply the denominators together.

Example

$$\frac{5}{10} \times 4 = \frac{5}{10} \times \frac{4}{1} = \frac{20}{10} = 2$$

Fractions Dividing

1. When dividing a fraction by a whole number you must turn the whole number into a fraction. (The number given is the numerator, over 1 as the denominator.)

2. Now flip the second fraction (like in the other method) and carry out a multiplication.

Example

$$\frac{5}{10} \div 5 = \frac{5}{10} \div \frac{5}{1} = \frac{5}{10} \times \frac{1}{5} = \frac{5}{50} = \frac{1}{10}$$

Fractions Dividing

1. FLIP THE SECOND FRACTION

EXAMPLE
$$\frac{5}{10} \div \frac{4}{5} =$$

$$\frac{5}{10} \div \frac{5}{4} =$$

2. MULTIPLY THE NUMERATORS TOGETHER
3. MULTIPLY THE DENOMINATORS TOGETHER.
4. SIMPLIFY IF NECESSARY.

EXAMPLE
$$\frac{5}{10} \div \frac{5}{4} = \frac{25}{40} = \frac{5}{8}$$