Column Subtraction

$$2347 - 764 = 1583$$

Minuend – Subtrahend = Difference

1)
```
  2 3 4 7
-   7 6 4
---------
        3
```

Subtract the **ones**

7 ones – 4 ones = 3 ones

2)
```
    2
  2 3 ⁴4 7
-     7 6 4
-----------
      8 3
```

Subtract the **tens**

4 – 6 You can't do.
You need to exchange 1 hundred for 10 tens.

14 tens – 6 tens = 8 tens

3)
```
  ¹  ¹2
  2 3 4 7
-     7 6 4
-----------
    5 8 3
```

Subtract the **hundreds**

2 – 7 You can't do.
You need to exchange 1 thousand for 10 hundreds.

12 hundreds – 7 hundreds = 5 hundreds

4)
```
  ¹  ¹2
  2 3 4 7
- 0 7 6 4
-----------
  1 5 8 3
```

Subtract the **thousands**

1 – 0 = 1

Although it doesn't say 0, you have no thousands to subtract from 1 thousand.

Column Addition

$$2205 + 3879 = 6084$$

Addend + Addend = Sum

1)

```
  2 2 0 5
+ 3 8 7 9
─────────
        4
      1
```

Add the **ones**

5 ones + 9 ones = 14 ones

Keep the 4 ones in 14 in the ones column
We move the 1 ten in 14 to the tens column

2)

```
  2 2 0 5
+ 3 8 7 9
─────────
      8 4
      1
```

Add the **tens**

0 tens + 7 tens = 7 tens

REMEMBER: add the extra tens
7 tens + 1 ten = 8 tens

3)

```
  2 2 0 5
+ 3 8 7 9
─────────
    0 8 4
  1   1
```

Add the **hundreds**

2 hundreds + 8 hundreds = 10 hundreds

10 hundreds is the same as 1 thousand.
We put a 0 in the hundreds column and move the
1 thousand to the thousand column

4)

```
  2 2 0 5
+ 3 8 7 9
─────────
  6 0 8 4
  1
```

Add the **thousands**

2 thousands + 3 thousands = 5 thousands

REMEMBER: Add on the extra thousand
5 thousands + 1 thousand = 6 thousands

Column Multiplication

$$2146 \times 4 = 8584$$

Multiplicand x Multiplier = Product

1)

```
  2 1 4 6
×       4
─────────
        4
      2
```

Multiply the **ones** by the multiplier

6 ones x 4 = 24 ones
Keep the 4 ones in 24 in the ones column, and move the 2 tens to the tens column

2)

```
  2 1 4 6
×       4
─────────
      8 4
    1 2
```

Multiply the **tens** by the multiplier

4 tens x 4 = 16 tens
REMEMBER: Add on the extra tens

16 tens + 2 tens = 18 tens
We keep the 8 in the tens column and exchange the 10 tens for one hundred.

3)

```
  2 1 4 6
×       4
─────────
    5 8 4
    1 2
```

Multiply the **hundreds** by the multiplier

1 hundreds x 4 = 4 hundred
REMEMBER: Add on the extra hundred

4 hundred + 1 hundred = 5 hundreds

4)

```
  2 1 4 6
×       4
─────────
  8 5 8 4
    1 2
```

Multiply the **thousand** by the multiplier

2 thousands x 4 = 8 thousands

Column Multiplication

$$214 \times 14 = 2986$$

Multiplicand x Multiplier = Product

1)
```
    2 1 4
×       4
  ─────────
    8 5 6
  ─────────
```
Multiply by the **ones** in the multiplier

2)
```
    2 1 4
×      1 0
  ─────────
  2 1 4 0
  ─────────
```
Multiply by the **multiple of ten** in the multiplier
REMEMBER: put the 0 in first,

3)
```
    8 4 6
+ 2 1 4 0
  ─────────
  2 9 8 6
  ─────────
```
Add the two **products** together,

Contracted method

1)
```
    2 1 4
×      1 4
  ─────────
    8 5 6
  ─────────
```
Multiply your number by the **ones** in the multiplier.

4 x 214 = 856

2)
```
    2 1 4
×      1 4
  ─────────
    8 5 6
  ─────────
  2 1 4 0
  ─────────
```
Multiply your number by the **multiple of tens** in the multiplier.
REMEMBER: put the 0 in first.

214 x 10 = 2140

3)
```
    2 1 4
×      1 4
  ─────────
    8 5 6
+ 2 1 4 0
  ─────────
  2 9 8 6
  ─────────
```
Add the two **products** together.

856 + 2140 = 2986

Short division (bus stop method)

$$2374 \div 5 = 474\frac{4}{5}$$

Dividend ÷ Divisor = Quotient

1)

$$5\overline{)\ 2\ 3\ 7\ 4}$$

Set up your bus stop method.

$$\text{Divisor}\ \overline{\big|\ \text{Dividend}}$$

2)

$$5\overline{)\ 2\,^2 3\ 7\ 4}\quad^0$$

Start from the left.
How many **5's go into 2? 0**
We carry the 2 over to the next column.

3)

$$5\overline{)\ 2\,^2 3\,^3 7\ 4}\quad^{0\ 4}$$

How many **5's go into 23? 4**
5 x 4 = 20 and there is 3 left over
We carry the 3 over to the next column.

4)

$$5\overline{)\ 2\,^2 3\,^3 7\,^2 4}\quad^{0\ 4\ 7}$$

How many **5's go into 37? 7**
7 x 5 = 35 and there is 2 left over
We carry the 3 over to the next column.

5)

$$5\overline{)\ 2\,^2 3\,^3 7\,^2 4}\quad^{0\ 4\ 7\ 4\ r\ 4}$$

How many **5's go into 24? 4**
5 x 4 = 20 and there is 4 left over
We have no digits left, so we write remainder 4.

6)

$$5\overline{)\ 2\,^2 3\,^3 7\,^2 4}\quad^{0\ 4\ 7\ 4}\ \frac{4}{5}$$

We can convert remainders into a fraction.

There is 4 left out of 5 (the divisor)