Long subtraction is a method for subtracting one large number from another. It is designed to make subtraction easier and more organised when working with larger numbers.

Method

This method is most easily shown through an example. Let's solve 5173 – 1462.

1. We begin by writing the numbers in a stack with their thousands, hundreds, tens and units columns lined up, and with the number that is being subtracted on the bottom:

	5	1	7	3
-	1	4	6	2

2. Starting in the units column on the far right: if the number on the bottom is smaller than the number on top, minus the bottom number away from the top number. In this example it is, so we calculate 3 – 2 and write the answer between the horizontal lines in the units column.

	5	1	7	3
-	1	4	6	2
				1

3. Move to the tens column to the left of the units column. Since the number on the bottom is less than the number on the top, we calculate 7 – 6 and write the answer in the tens column.

	5	1	7	3
-	1	4	6	2
			1	1

4. Move to the hundreds column to the left of the tens column. Since the number on the top is now less than the number on the bottom, we 'borrow' one of the thousands from the next column and give it to the hundreds column. This means we cross out the 5 in the thousands column and write in a 4 (since we have borrowed one of the thousands) and we now write 11 in the hundreds column.

		5̷^{4}	11	7	3
-		1	4	6	2
				1	1

We may now perform the subtraction calculation, since the number on top is greater than the number on the bottom. We calculate 11 – 4 and write the answer in the hundreds column.

		5̷^{4}	11	7	3
-		1	4	6	2
			7	1	1

5. We move again to the left, and subtract the bottom number from the top. We calculate 4 – 1 and write the answer in the thousands column.

		5̷^{4}	11	7	3
-		1	4	6	2
		3	7	1	1

6. We now have the answer, 3711.

   Note: We can check that this is the correct answer by adding 3711 + 1462 to get 5173, so we know we have the correct answer.

If the number on the bottom is larger than the number above it, but we cannot borrow 1 from the number to the left as that is a 0, we borrow from the next column over.
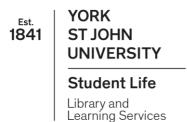
For example:

```
      1    0    0
  -        5    9
  _____
```

We can't borrow 1 from the tens column, so we borrow from the hundreds column and give it to the tens column:

```
     ₁0   10    0
  -        5    9
  _____
```

Then we borrow from the tens column:

```
     ₁0  ₁₀9   10
  -        5    9
  _____
```

Now we can subtract:

```
     ₁0  ₁₀9   10
  -        5    9
  _____
      0    4    1
```

To get 100 − 59 = 41.

More than two numbers

Sometimes we may have a question that requires taking away more than one value from another.

To do this, we just take one number away, and then take the other away from the answer.

For example, if we were asked 507 – 23 – 104, we would find 507 – 23 = 484, and then calculate 484 – 104 = 380.

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