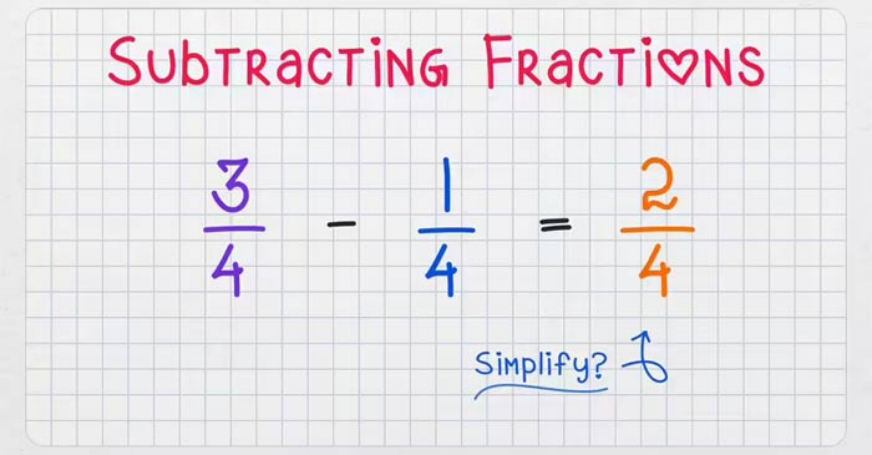
How to subtract fractions

Anyone can learn to subtract fractions. It's as simple as multiplying fractions, but the subtraction process is different depending on whether the denominators, or bottom numbers, of the two fractions are the same.

Anyone can learn **to subtract fractions** . It's as simple as multiplying fractions , but the subtraction process differs depending on whether the denominators, or bottom numbers, of the two fractions are the same.



How to subtract fractions with like denominators

When subtracting numbers with the same denominator (that is, the same number at the bottom of both fractions), the calculation is easy. You just subtract the numerators or top numbers from each other and keep the two denominators the same. Here's an example:

```
3/4 – 1/4 = 2/4
```

When the numerator and denominator share a common factor, simplify the fraction by finding the common factor and dividing both by that factor. In the case of 2/4, the common factor is 2, and the simplified version of 2/4 is 1/2.

Note that 2/4 and 1/2 represent exactly the same quantity.

How to subtract fractions with different denominators

Step 1: Find the lowest common denominator

When subtracting fractions with unlike denominators, the first task is to find the common denominator. Consider two unlike denominators and find a number that is a multiple of both, that is, a number that can be divided evenly into each denominator.

Suppose fraction A (3/4) minus fraction B (2/5):

```
3/4 – 2/5 = ?
```

The denominator of fraction A is 4 and fraction B is 5, and we know the least common multiple of 4 and 5 is 20. During subtraction, you can use another common multiple such as 40, but it is usually better to use the least common denominator (LCD), which is the smallest number that fits into both denominators.

Note: Sometimes you will come across mixed fractions, which are a combination of a whole number and a proper fraction. When subtracting mixed fractions, such as 2 1/2 – 1 3/4, you will need to convert the values ??to fractions before finding the lowest common denominator. In this example, 2 1/2 would become 5/2 and 1 3/4 would become 7/4.

Step 2: Convert both fractions
In an arithmetic expression, you can multiply any fraction by 1; that is always valid.

So for each fraction, you want to find the number that can be multiplied by the denominator to get the lowest common denominator when subtracting the fractions. This number will always have the same denominator as the other fraction.

Since fraction A has a denominator of 4, you'll need to multiply by 5 — but you can't just multiply the denominator by 5. Instead, you'll multiply the entire fraction by 5/5, which equals 1. You'll multiply fraction B by 4/4.

Here's how to convert two unlike fractions into fractions with a common denominator:

```
3/4 – 2/5 = [(5/5) x (3/4)] – [(4/4) x (2/5)] [(5/5) x (3/4)] – [(4/4) x (2/5)] =
```

Step 3: Subtract the two numerators

Now you are ready to subtract the two numerators.

```
15/20 – 8/20 = 7/20
```

There is no need to simplify this problem because there are no common factors of 7 and 20.

Common mistakes when subtracting fractions

Subtracting fractions may seem simple, but even small mistakes can lead to incorrect results. Here are some common mistakes to watch out for.

Ignore the common denominator

One of the most common mistakes is subtracting fractions with unlike denominators without first finding a common denominator. Always remember that fractions must have the same denominator in order to be subtracted. For example, 2/3 ? 4/5 requires a common denominator of 15.

Confusing the numerator with the denominator

After aligning the denominators, keep track of which number is the numerator (top) and which number is the denominator (bottom). Mixing them up can lead to incorrect subtraction and incorrect results.

Improper handling of mixed fractions

Subtracting mixed fractions without converting them to fractions is a serious mistake. For example, 2 1/2 ? 1 3/4 must be converted to 5/2 ? 7/4, then the common denominator is found.

Reduce the fraction first

Avoid the temptation to simplify any fractions before you subtract. Only simplify the final answer to ensure you don't leave out any common factors.