Three Types of Fractions

There are three types of fraction:



Fractions

A Fraction (such as 7/4) has two numbers:

Numerator Denominator

The top number is the Numerator, it is the number of **parts you have**. The bottom number is the Denominator, it is the number of **parts the whole is divided into**.

Example: 7/4 means:

- We have 7 parts
- Each part is a **quarter** (1/4) of a whole

So we can define the three types of fractions like this:

Proper Fractions:	The numerator is less than the denominator Examples: $1/3$, $3/4$, $2/7$
Improper Fractions:	The numerator is greater than (or equal to) the denominator Examples: $4/_3$, $11/_4$, $7/_7$
Mixed Fractions:	A whole number and proper fraction together Examples: $1 \frac{1}{3}$, $2 \frac{1}{4}$, $16 \frac{2}{5}$

Improper Fractions



An Improper fraction has a top number larger than (or equal to) the bottom number,

It is "top-heavy"

7/4

(seven-fourths or seven-quarters)

Examples

3/2 7/4 16/15 15/15 99/5

See how the top number is bigger than (or equal to) the bottom number? That makes it an Improper Fraction, (but there is <u>nothing wrong about Improper Fractions</u>).

So, an improper fraction is just a fraction where the top number (numerator) is greater than or equal to the bottom number (denominator).

In other words, it is **top-heavy**.



Can be Equal

What about when the numerator is equal to the denominator? For example $\frac{4}{4}$?

Well, it is obviously the same as a whole, but it is written as a fraction, so most people agree it is a type of improper fraction.

Improper Fractions or Mixed Fractions

You can use either an improper fraction or a mixed fraction to show the same amount. For example 1 3/4 = 7/4, shown here:



Converting Improper Fractions to Mixed Fractions

To convert an improper fraction to a mixed fraction, follow these steps:



- Divide the numerator by the denominator.
- Write down the whole number answer
- Then write down any remainder above the denominator.

Example: Convert 11/4 to a mixed fraction.

Divide:

 $11 \div 4 = 2$ with a remainder of 3

Write down the 2 and then write down the remainder (3) above the denominator (4), like this:

2 3 2 4

Converting Mixed Fractions to Improper Fractions

To convert a mixed fraction to an improper fraction, follow these steps:

- Multiply the whole number part by the fraction's denominator.
- Add that to the numerator
- Then write the result on top of the denominator.

Example: Convert 3 $^{2}/_{5}$ to an improper fraction.

Multiply the whole number by the denominator:

3 × 5 = 15

Add the numerator to that:

15 + 2 = 17

Then write that down above the denominator, like this:

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