## Three Types of Fractions

There are three types of fraction:


Proper Fraction


Improper
Fraction
$2 \frac{1}{3}$

Mixed Fraction

## Fractions

A Fraction (such as ${ }^{7} / 4$ ) has two numbers:

## Numerator <br> 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 1/3, 2 1/4, $16^{2 / 5} 5$

## 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

$$
\begin{array}{lllll}
3 / 2 & 7 / 4 & 16 / 15 & 15 / 15 & 99 / 5
\end{array}
$$

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

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.


4/4

## Can be Equal

What about when the numerator is equal to the denominator? For example 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 $13 / 4=7 / 4$, shown here:
$13 / 4$


7/4


## 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:

## 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 $32 / 5$ to an improper fraction.

Multiply the whole number by the denominator:
$3 \times 5=15$
Add the numerator to that:
$15+2=17$
Then write that down above the denominator, like this:

