Maths symbols and equations – English vocabulary

I.1 Introduction

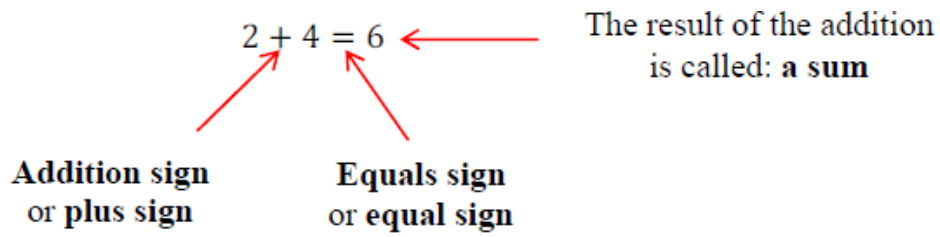
Mathematical symbols are used to perform various operations. The symbols make it easier to refer mathematical quantities. It is interesting to note that mathematics is completely based on numbers and symbols. The math symbols not only refer to different quantities but also represent the relationship between two quantities. All mathematical symbols are mainly used to perform mathematical operations under various concepts [1].

The purpose of this chapter is to show how to read mathematical symbols and equations in English.

I.2 Symbols and basic mathematical operations

I.2.1 Addition

\+ → **Plus** or **add**



We read the whole equation like this:

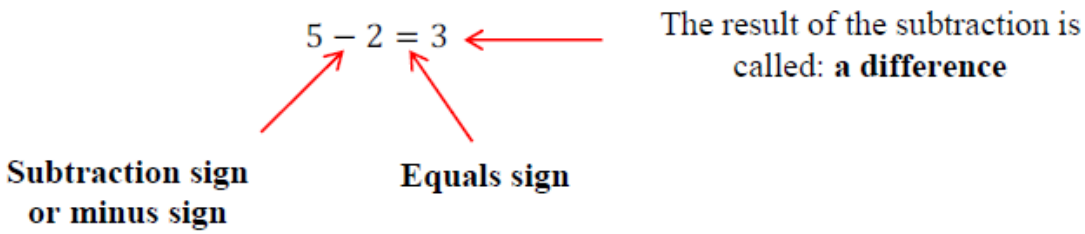
"**Two plus four equals six**" or "**Two and four is six**"

If you want to explain this equation to someone, than you can say:

"**If you add two and four together you get six**"

I.2.2 Subtraction

\- → **Minus** or **take away**



We read the whole equation like this:

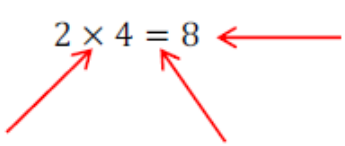
"**Five minus two equals three**"

If you want to explain this equation to someone, than you can say:

"**If you take two away from five you get three**"

I.2.3 Multiplication

× → **Times** or **multiplied by**



The result of the multiplication is called: **a product**

Multiplication sign or **times sign**

Equals sign

We read the whole equation like this:

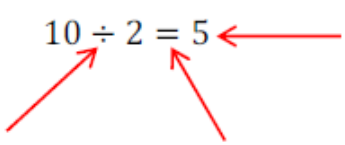
"**Two times four equals eight**"

If you want to explain this equation to someone, than you can say:

"**If you multiply two by four you get eight**"

I.2.4 Division

÷ → **Divided by**



The result of the division is called: **a quotient**

Division sign

Equals sign

We read the whole equation like this:

"**Ten divided by two equals five**"

If you want to explain this equation to someone, than you can say:

"**If you divided ten by two you get five**"

On some occasions you will have **brackets** used in equations like this:

$$(1 + 2) \times 4 = 12$$

We read the whole equation like this:

"**One plus two in brackets, times four equals twelve**"

I.2.5 Other symbols

As you know, equations are not always equal. Sometimes you can get different symbols ($>$; $\geq$; $<$; $\leq$; $\neq$; $\approx$).

Let's see some examples:

Let's see some examples:

$x = 4$ → "**x equals four**"

$x \neq 4$ → This how we read it : "**x is not equal to four**"

$x > 4$ → "**x is greater than four**" or "**x is more than four**"

$x \geq 4$ → "**x is greater than or equal to four**"

$x < 4$ → "**x is smaller than four**" or "**x is less than four**"

$x \leq 4$ → "**x is smaller than or equal to four**"

$x \approx 4$ → "**x is approximately equal to four**"

Now, we can move onto: fractions, decimals, roots and exponents.

I.2.6 Fractions

The number at the top is called **the numerator**

$\frac{1}{4}$ ← The number at the bottom is called **the denominator**

We read this fraction as "**One fourth**"

If the numerator is greater than one, than we add the letter (s) to the ordinal number in the denominator. For example:

$\frac{2}{4}$

We read this fraction as "**Two fourths**"

I.2.7 Decimals

0.5 → The **dot** in the middle is called **the period** or **decimal point**.

This is how to read it : "**zero point five**" or "**five tenths**".

Zero can be omitted and we can say "**point five**"

If the decimal number is long like this 82.777, than we say "**Eighty-two point seven seven seven**"

We never say: "Eighty-two point seven hundred and seventy-seven" this would be incorrect.

Let's move onto square roots.

I.2.8 Square roots

$\sqrt{6}$

The first symbol is called **radical sign** or **square root sign**

This is how we read it: "**the square root of six**".

If there is a number above the radical sign $\sqrt[5]{42}$, we read it like this: "**the fifth root of forty-two**"

However, there is an exception: if the number above the radical sign is three $\sqrt[3]{9}$, than we do not say "the third root of nine" but rather "**the cube root of nine**"

I.2.9 Exponents

The small value in this example is called exponent

3^2

We read the number as: "**three squared**"

If the exponent value is three, than we read "**three cubed**"

If the exponent value is greater than three like in this example: 3^5. We read "**three to the power of five**"

Now is the time to test your knowledge!

I.2.10 Exercise 1

Read the expressions below correctly using what you have learnt already.

$(x + y)$

$(x + 2y)$

$\frac{x + y}{y + x^2}$

$2^y \times 5$

$\frac{11 + x}{x^3} + 2x(5 - x)$

x^2y^2

(xyz)

$(6 - 5) \times 4 + 4.7 + 2^3 - \frac{7}{10} \neq \sqrt{257}$

Solution:

$(x + y)$ → "x plus y in brackets" or "open bracket x plus y close bracket"

$(x + 2y)$ → "x plus two y in brackets" or "open bracket x plus two y close bracket"

$\frac{x + y}{y + x^2}$

→ "x plus y divided by y plus x squared"

$2^y \times 5$

→ "Two to the power of y times five"

$\frac{11+x}{x^3} + 2x(5-x)$

→ "Eleven plus x divided by x cubed plus two x times open bracket five minus x close bracket"

x^2y^2

→ "x squared times y squared" or "x squared y squared"

(xyz)

→ "x y z in brackets" or "open bracket x y z close bracket"

$(6-5) \times 4 + 4.7 + 2^3 - \frac{7}{10} \neq \sqrt{257}$

→ "Six minus five in brackets, times four, plus four point seven, plus two cubed, minus seven tenths, is not equal to the square root of two hundred and fifty-seven"

I.2.11 Exercise 2

Translate in French both the title of this chapter and its introduction.

Solution:

Chapitre 1 : Symboles et équations mathématiques – Vocabulaire anglais

I.1 Introduction

Les symboles mathématiques sont utilisés pour effectuer diverses opérations. Les symboles facilitent la référence aux grandeurs mathématiques. Il est intéressant de noter que les mathématiques sont entièrement basées sur des nombres et des symboles. Les symboles mathématiques font non seulement référence à différentes quantités, mais représentent également la relation entre deux quantités. Tous les symboles mathématiques sont principalement utilisés pour effectuer des opérations mathématiques sous divers concepts [1].

Le but de ce chapitre est de montrer comment lire les symboles et les équations mathématiques en anglais.