



OPERATIONS IN \mathbb{N}

They transform two numbers in a third number.

THEY ARE

ADDITION

After the first number, the units of the second number are counted.

$$3 + 4 = 7$$

MULTIPLICATION

It is a repeated addition of equal addenda.

$$\begin{array}{rcl} 2 \cdot 3 & = & 2 + 2 + 2 \\ & & \end{array}$$

SUBTRACTION

It is the inverse operation of addition.

$$7 - 3 = 4$$

Indeed

$$4 + 3 = 7$$



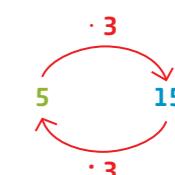
DIVISION

It is the inverse operation of multiplication.

$$15 : 3 = 5$$

Indeed

$$5 \cdot 3 = 15$$



IT HAS

NEUTRAL ELEMENT 0

$$\begin{array}{l} 3 + 0 = 3 \\ 0 + 3 = 3 \end{array}$$

IT HAS

NEUTRAL ELEMENT 1

$$\begin{array}{l} 3 \cdot 1 = 3 \\ 1 \cdot 3 = 3 \end{array}$$

IT HAS THE PROPERTY

INVARIANT

$$\begin{array}{l} 18 - 7 = 11 \\ (18 - 3) - (7 - 3) = 15 - 4 = 11 \\ (18 + 3) - (7 + 3) = 21 - 10 = 11 \end{array}$$

IT HAS THE PROPERTY

INVARIANT

$$\begin{array}{l} 18 : 6 = 3 \\ (18 : 2) : (6 : 2) = 9 : 3 = 3 \\ (18 \cdot 2) : (6 \cdot 2) = 36 : 12 = 3 \end{array}$$

PROPERTIES

COMMUTATIVE

$$\begin{array}{l} 5 + 3 = 8 \\ 3 + 5 = 8 \end{array}$$

ASSOCIATIVE

$$\begin{array}{l} 3 + 5 + 4 = 12 \\ 3 + 9 = 12 \end{array}$$

PROPERTIES

COMMUTATIVE

$$\begin{array}{l} 3 \cdot 5 = 15 \\ 5 \cdot 3 = 15 \end{array}$$

ASSOCIATIVE

$$\begin{array}{l} 3 \cdot 2 \cdot 5 = 30 \\ 3 \cdot 10 = 30 \end{array}$$

MORE OPERATIONS FORM EXPRESSIONS

WITHOUT BRACKETS

You do:

- first multiplications and divisions in the order they appear;
- then additions and subtractions in the order they appear.

WITH BRACKETS

You do:

- first the operations in the round brackets,
- then the ones in the square brackets,
- finally the ones in the curly brackets.

العمليات في \mathbb{N}

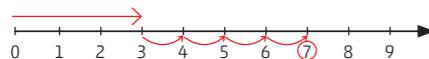
يحولون عددين إلى عدد ثالث.

تكون

عملية جمع

بعد العدد الأول، تحسب وحدات الثاني

$$3 + 4 = 7$$



الضرب

إنه جمع متكرر لمجموع متساوية.

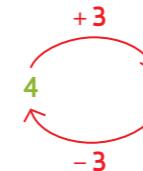
$$\begin{array}{rcl} 2 \cdot 3 \\ = \\ 2 + 2 + 2 \end{array}$$

الطرح

إنها العملية المعاكسة للجمع.

$$\begin{array}{rcl} 7 - 3 = 4 \\ 4 + 3 = 7 \end{array}$$

وبالفعل

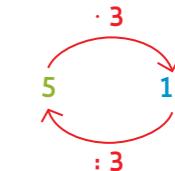


القسمة

إنه العملية المعاكسة للضرب.

$$\begin{array}{rcl} 15 : 3 = 5 \\ 5 \cdot 3 = 15 \end{array}$$

وبالفعل



عنصر محايد

$$3 + 0 = 3$$

$$0 + 3 = 3$$

عنصر محايد

$$3 \cdot 1 = 3$$

$$1 \cdot 3 = 3$$

عنصر إبادة

$$3 \cdot 0 = 0$$

$$0 \cdot 3 = 0$$

تبادلية

$$5 + 3 = 8$$

$$3 + 5 = 8$$

الخواص

ترابطية

$$3 + 5 + 4 = 12$$

$$3 + 9 = 12$$

تبادلية

$$3 \cdot 5 = 15$$

$$5 \cdot 3 = 15$$

الخواص

ترابطية

$$3 \cdot 2 \cdot 5 = 30$$

$$3 \cdot 10 = 30$$

لها خاصية

المقلوبة

$$18 - 7 = 11$$

$$(18 - 3) - (7 - 3) = 15 - 4 = 11$$

$$(18 + 3) - (7 + 3) = 21 - 10 = 11$$

لها خاصية

المقلوبة

$$18 : 6 = 3$$

$$(18 : 2) : (6 : 2) = 9 : 3 = 3$$

$$(18 \cdot 2) : (6 \cdot 2) = 36 : 12 = 3$$

العمليات متعددة تشكل التعبيرات الرياضية

بدون أقواس

أولاً عمليات الضرب والقسمة بالترتيب المكتوب

ثم الجمع والطرح بالترتيب المكتوب

تُحل

مع الأقواس

أولاً العمليات داخل الأقواس الدائرية،

ثم التي تقع بين الأقواس المعقولة،

وأخيراً التي تقع بين الأقواس الحاصرة



自然数运算 (N)

把两个数字转换成另外一个数字

即

加法

数完第一个数字的单位后继续数第二个数字对应的单位

$$3 + 4 = 7$$

乘法

相同的加数重复相加。

$$\begin{array}{r} 2 \cdot 3 \\ = 2 + 2 + 2 \end{array}$$

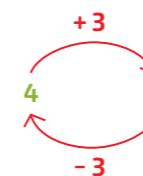
减法

是加法的逆运算。

$$7 - 3 = 4$$

实际上

$$4 + 3 = 7$$



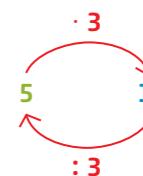
除法

是乘法的逆运算。

$$15 : 3 = 5$$

实际上

$$5 \cdot 3 = 15$$



具有

中性元素 0

$$3 + 0 = 3$$

$$0 + 3 = 3$$

中性元素 1

$$3 \cdot 1 = 3$$

$$1 \cdot 3 = 3$$

属性

差不变性

$$18 - 7 = 11$$

$$(18 - 3) - (7 - 3) = 15 - 4 = 11$$

$$(18 + 3) - (7 + 3) = 21 - 10 = 11$$

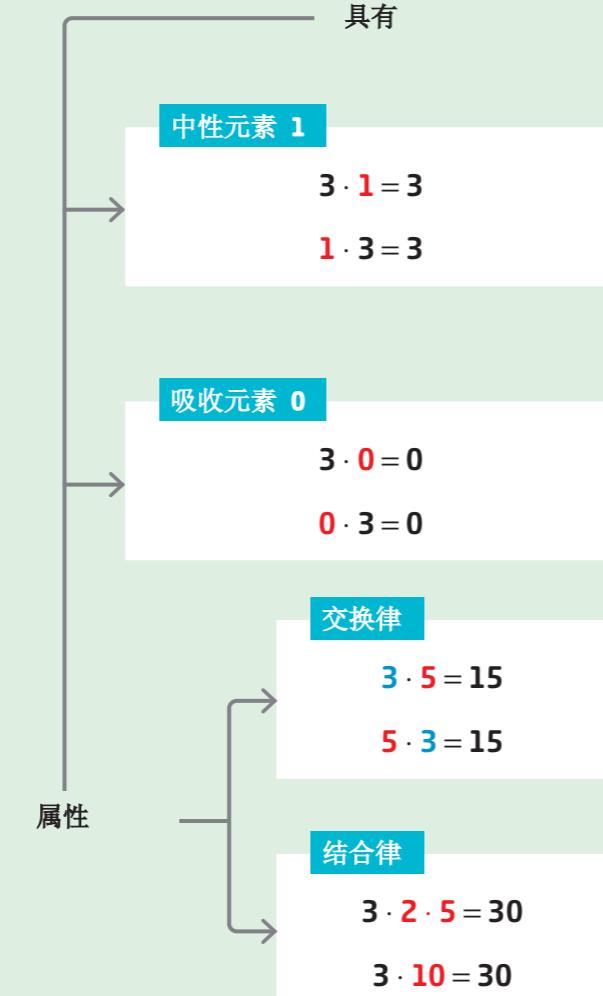
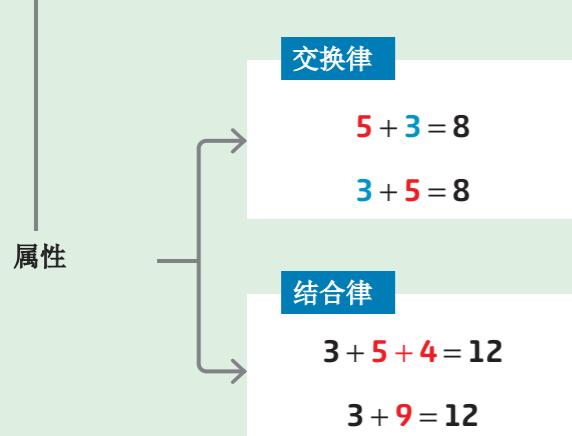
属性

商不变性

$$18 : 6 = 3$$

$$(18 : 2) : (6 : 2) = 9 : 3 = 3$$

$$(18 \cdot 2) : (6 \cdot 2) = 36 : 12 = 3$$



更多的运算式

不带括号
按如下操作:
■ 先按书面顺序进行乘法和除法。
■ 再按书面顺序进行加法减法。

带括号
按如下操作:
■ 先进行小括号内的运算;
■ 再进行中括号内的运算;
■ 最后进行大括号内的运算。

LES OPÉRATIONS EN \mathbb{N}

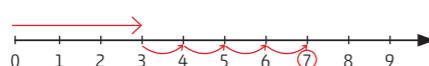
Elles transforment deux nombres en un troisième nombre.

SONT

ADDITION

Après le premier nombre,
on compte les unités du second.

$$3 + 4 = 7$$



MULTIPLICATION

Il s'agit d'une addition répétée
de nombres égaux.

$$\begin{array}{r} 2 \cdot 3 \\ = \\ 2 + 2 + 2 \end{array}$$

SOUSTRACTION

C'est l'opération inverse
de l'addition.

$$7 - 3 = 4$$

En effet,

$$4 + 3 = 7$$



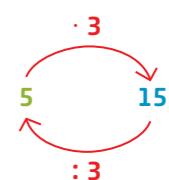
DIVISION

C'est l'opération inverse de
la multiplication.

$$15 : 3 = 5$$

En effet

$$5 \cdot 3 = 15$$



ÉLÉMENT NEUTRE 0

$$3 + 0 = 3$$

$$0 + 3 = 3$$

ÉLÉMENT NEUTRE 1

$$3 \cdot 1 = 3$$

$$1 \cdot 3 = 3$$

INVARIANTE

$$18 - 7 = 11$$

$$(18 - 3) - (7 - 3) = 15 - 4 = 11$$

$$(18 + 3) - (7 + 3) = 21 - 10 = 11$$

INVARIANTE

$$18 : 6 = 3$$

$$(18 : 2) : (6 : 2) = 9 : 3 = 3$$

$$(18 \cdot 2) : (6 \cdot 2) = 36 : 12 = 3$$

COMMUTATIVE

$$5 + 3 = 8$$

$$3 + 5 = 8$$

COMMUTATIVE

$$3 \cdot 5 = 15$$

$$5 \cdot 3 = 15$$

LES PROPRIÉTÉS

ASSOCIATIVE

$$3 + 5 + 4 = 12$$

$$3 + 9 = 12$$

LES PROPRIÉTÉS

ASSOCIATIVE

$$3 \cdot 2 \cdot 5 = 30$$

$$3 \cdot 10 = 30$$

PLUSIEURS OPÉRATIONS FORMENT LES EXPRESSIONS

SANS PARENTHÈSES

On effectue:

- d'abord les multiplications et les divisions dans l'ordre écrit,
- ensuite les additions et les soustractions dans l'ordre écrit.

AVEC PARENTHÈSES

On effectue:

- d'abord les opérations entre parenthèses rondes,
- puis celles entre crochets,
- enfin celles entre accolades.

OPERAȚII ÎN \mathbb{N}

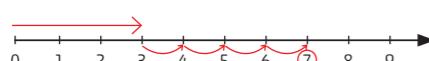
Transformă două numere într-un al treilea număr.

SUNT

ADUNAREA

După primul număr se numără unitățile celui de al doilea.

$$3 + 4 = 7$$



ÎNMULȚIREA

Este o adunare repetată de aditivi egali.

$$\begin{array}{rcl} 2 \cdot 3 \\ = \\ 2 + 2 + 2 \end{array}$$

SCĂDEREA

Este operația inversă a adunării.

$$7 - 3 = 4$$

Într-adevăr

$$4 + 3 = 7$$



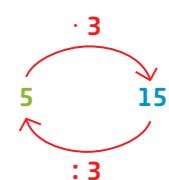
ÎMPĂRTITREA

Este operația inversă a înmulțirii.

$$15 : 3 = 5$$

Într-adevăr

$$5 \cdot 3 = 15$$



ELEMENTUL NEUTRU 0

$$3 + 0 = 3$$

$$0 + 3 = 3$$

ELEMENTUL NEUTRU 1

$$3 \cdot 1 = 3$$

$$1 \cdot 3 = 3$$

ARE PROPRIETATEA

INVARIANTĂ

$$18 - 7 = 11$$

$$(18 - 3) - (7 - 3) = 15 - 4 = 11$$

$$(18 + 3) - (7 + 3) = 21 - 10 = 11$$

ARE PROPRIETATEA

$$18 : 6 = 3$$

$$(18 : 2) : (6 : 2) = 9 : 3 = 3$$

$$(18 \cdot 2) : (6 \cdot 2) = 36 : 12 = 3$$

PROPRIETĂȚI

COMUTATIVĂ

$$5 + 3 = 8$$

$$3 + 5 = 8$$

ASOCIAȚIVĂ

$$3 + 5 + 4 = 12$$

$$3 + 9 = 12$$

PROPRIETĂȚI

COMUTATIVĂ

$$3 \cdot 5 = 15$$

$$5 \cdot 3 = 15$$

ASOCIAȚIVĂ

$$3 \cdot 2 \cdot 5 = 30$$

$$3 \cdot 10 = 30$$

MAI MULTE OPERAȚII FORMEAZĂ EXPRESIILE

FĂRĂ PARAANTEZE

Se efectuează:

- mai întâi înmulțirile și împărțirile în ordinea scrisă,
- apoi adunările și scăderile în ordinea scrisă.

CU PARAANTEZE

Se efectuează:

- mai întâi operațiile din parantezele rotunde,
- apoi din cele pătrate,
- și la sfârșit din acolade.



LAS OPERACIONES EN \mathbb{N}

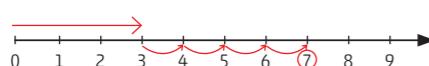
Transforman dos números en un tercer número.

SON

SUMA

Después del primer número se cuentan las unidades del segundo.

$$3 + 4 = 7$$



MULTIPLICACIÓN

Es una suma repetida de sumandos iguales.

$$\begin{array}{r} 2 \cdot 3 \\ = \\ 2 + 2 + 2 \end{array}$$

RESTA

Es la operación inversa a la suma.

$$7 - 3 = 4$$

Efectivamente

$$4 + 3 = 7$$



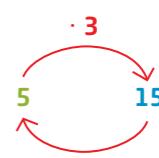
DIVISIÓN

Es la operación inversa a la multiplicación.

$$15 : 3 = 5$$

Efectivamente

$$5 \cdot 3 = 15$$



TIENE

ELEMENTO NEUTRO 0

$$3 + 0 = 3$$

$$0 + 3 = 3$$

TIENE

ELEMENTO NEUTRO 1

$$3 \cdot 1 = 3$$

$$1 \cdot 3 = 3$$

POSEE LA
PROPIEDAD

DE LA DIFERENCIA NULA

$$18 - 7 = 11$$

$$(18 - 3) - (7 - 3) = 15 - 4 = 11$$

$$(18 + 3) - (7 + 3) = 21 - 10 = 11$$

POSEE LA
PROPIEDAD

DE LA DIFERENCIA NULA

$$18 : 6 = 3$$

$$(18 : 2) : (6 : 2) = 9 : 3 = 3$$

$$(18 \cdot 2) : (6 \cdot 2) = 36 : 12 = 3$$

LAS PROPIEDADES

CONMUTATIVA

$$5 + 3 = 8$$

$$3 + 5 = 8$$

ASOCIATIVA

$$3 + 5 + 4 = 12$$

$$3 + 9 = 12$$

LAS PROPIEDADES

CONMUTATIVA

$$3 \cdot 5 = 15$$

$$5 \cdot 3 = 15$$

ASOCIATIVA

$$3 \cdot 2 \cdot 5 = 30$$

$$3 \cdot 10 = 30$$

MÚLTIPLES OPERACIONES
FORMAN LAS EXPRESIONES

SIN PARÉNTESIS

Se resuelven:

- primero las multiplicaciones y divisiones en el orden escrito,
- luego sumas y restas en el orden escrito.

CON PARÉNTESIS

Se resuelven:

- primero las operaciones en los paréntesis,
- luego aquellas en los corchetes,
- en fin aquellas en las llaves.