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The Language of Mathematics

Basic Mathematical Terms

+	plus
−	minus
·	multiplied by
:	divided by
=	equals; is
≠	doesn't equal; is different from
≈	is approximately equal to
>	is more than
<	is less than
≥	greater than or equal to
≤	less than or equal to
( )	brackets (British English); parenthesis (American English)
[ ]	square brackets (British English); brackets (American English)
{ }	braces
|x|	absolute x, the absolute value of x
x^2, x^3, x^4, x^{-5}, x^n	x squared, x cubed, x to the fourth power, x to the minus fifth power, x to the n^{th} power
a_1, a_x	a sub one, a sub x
∈	is the element of
∉	is not the element of
ℕ 2, 4, 6, 8, … 1, 3, 5, 7, 9, …	set of natural numbers even numbers odd numbers
ℤ	set of integers
ℚ	set of rational numbers
ℝ	set of real numbers
A ⊆ B	A is a subset of B
A ∪ B	union of the sets A and B
A ∩ B	intersection of the sets A and B
{ }	empty set; null set
$\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{n}$	one half, one third, one fourth, one n^{th}
[a; b] (a; b], [a; b) (a; b)	closed interval a, b half open interval a, b open interval a, b
3.7	three point seven
-2, -x, 4 − (-2)	negative two, the opposite of x, four minus negative 2

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Calculation Terms / Description of Mathematical operations

Addition a + b = c a … addend b … addend c … sum	 a plus b equals/is c The sum of a and b is c.
Subtraction a − b = c a … minuend b … subtrahend c … difference	 a minus b equals/is c The difference between a and b is c.
Multiplication a x b = c a … factor b …factor c … product	 a multiplied by b equals/is c a times b equals/is c The product of a and b is c.
Division a : b = c a … dividend b … divisor c … quotient 26 : 4 = 6 remainder 2	 a divided by b equals/is c The quotient of a divided by b is c. 26 divided by 4 is 6 with a remainder of 2
Brackets 6 x [a - (b + 10)] $(a + b)^3$	 British English: 6 square bracket a minus bracket b plus 10 close bracket close square bracket American English: 6 bracket a minus parenthesis b plus 10 close parenthesis close bracket a plus b (pause) to the third a plus b in brackets/parenthesis to the third
Fractions $\frac{a}{b} = c$ a … numerator b … denominator	 a over b equals/is c a divided by b equals/is c
Proportions a : b a = k · b a : b = c : d	 ratio of a to b a is directly proportional to b a is to b as c is to d
Raising to a power a^n a … base n … exponent	 a to the power of n a to the n^{th} power

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Exercises

1 Match the symbols in A with expressions in B.

A	B
{ }	absolute x
≥	set of rational numbers
ℤ	is approximately equal to
≈	set of integers
ℚ	half open interval a, b
≠	is different from
|x|	braces
(a; b]	greater than or equal to

2 Write down the terms according to the given example.

Two multiplied by eight equals sixteen.	2 · 8 = 16
Seven plus six equals thirteen.	
Twenty-one minus four is less than thirty five.	
Eighteen squared divided by nine equals thirty-six.	
Two hundred and fifty-two multiplied by four is not equal to nine hundred and forty-eight.	
Four is to seven as twelve to twenty-one.	
Thirty-seven subtracted from hundred and twenty-one is eighty-four.	
Ten minus four times fifteen plus two equals hundred and two.	
Two plus six in parentheses to the fourth is four thousand and ninety-six.	

3 **a.** Work together with a partner and take turns to dictate the following calculations which should be keyed into the calculator.

b. Think up four more calculations.

14 + 36 − 5 = _____
78 x 9 : 2 = _____
3764 : (2 - 56) · 13 = _____
$6^4 + 8^2$ = _____
$2x[(8-3)^2 - 12] + 345 : 5$ = _____

4 Number Trick

Think of any number. Add five to it. Multiply this result by three. Subtract seven. Divide the remainder by three. Finally subtract your chosen number.

Do it several times with different numbers. What do you discover?