

TRANSLATING KEY WORDS AND PHRASES INTO ALGEBRAIC EXPRESSIONS

The table below lists some key words and phrases that are used to describe common mathematical operations. To write algebraic expressions and equations, assign a variable to represent the unknown number. In the table below, the letter "x" is used to represent the unknown. In translation problems, the words **sum**, **total**, **difference**, **product** and **quotient** imply at least two parts – use parentheses when a **sum** or **difference** is multiplied. For example, the phrase "the **sum** of three times a number and five" translates to " $3x + 5$," while the phrase "**three times the sum** of a number and five" translates to " $3(x + 5)$."

OPERATION	KEY WORD/PHRASE	EXAMPLE	TRANSLATION
Addition (+)	plus	A number plus three	$x + 3$
	more than	Ten more than a number	$x + 10$
	the sum of	The sum of a number and five	$x + 5$
	the total of	The total of six and some number	$6 + x$
	increased by	A number increased by two	$x + 2$
	added to	Eleven added to a number	$x + 11$
Subtraction (-)	minus	A number minus seven	$x - 7$
	less than	Four less than a number	$x - 4$
	the difference of	The difference of a number and three	$x - 3$
	less	Nine less a number	$9 - x$
	decreased by	A number decreased by twelve	$x - 12$
	subtracted from	Six subtracted from a number	$x - 6$
Multiplication (x)	times	Eight times a number	$8x$
	the product of	The product of fourteen and a number	$14x$
	twice; double	Twice a number; double a number	$2x$
	multiplied by	A number multiplied by negative six	$-6x$
	of	Three fourths of a number	$\frac{3}{4}x$
Division (÷)	the quotient of	The quotient of a number and seven	$\frac{x}{7}$
	divided by	Ten divided by a number	$\frac{10}{x}$
	the ratio of	The ratio of a number to fifteen	$\frac{x}{15}$
Powers (xⁿ)	the square of; squared	The square of a number; a number squared	x^2
	the cube of; cubed	The cube of a number; a number cubed	x^3
Equals (=)	equals	Seven less than a number equals ten.	$x - 7 = 10$
	is	Three times a number is negative six.	$3x = -6$
	is the same as	Eight is the same as twice a number.	$8 = 2x$
	yields	Twelve added to a number yields five.	$x + 12 = 5$
	amounts to	Nine less a number amounts to twenty.	$9 - x = 20$