

Translating Words into Algebraic Expressions

Operation	Word Expression	Algebraic Expression
Addition	Add, Added to, the sum of, more than, increased by, the total of, plus	+
	Add x to y	$x + y$
	y added to 7	$7 + y$
	The sum of a and b	$a + b$
	m more than n	$n + m$
	p increased by 10	$p + 10$
	The total of q and 10	$q + 10$
	9 plus m	$9 + m$
Subtraction	Subtract, subtract from, difference, between, less, less than, decreased by, diminished by, take away, reduced by, exceeds, minus	-
	Subtract x from y	$y - x$
	From x, subtract y	$x - y$
	The difference between x and 7	$x - 7$
	10 less m	$10 - m$
	10 less than m	$m - 10$
	p decreased by 11	$p - 11$
	8 diminished by w	$8 - w$
	y take away z	$y - z$
	p reduced by 6	$p - 6$
	x exceeds y	$x - y$
	r minus s	$r - s$
Multiplication	Multiply, times, the product of, multiplied by, times as much, of	$\times$
	7 times y	$7y$
	The product of x and y	xy
	5 multiplied by y	$5y$
	one-fifth of p	$\frac{1}{5}p$
Division	Divide, divides, divided by, the quotient of, the ratio of, equal amounts of, per	$\div$
	Divide x by 6	$\frac{x}{6}$ or $x \div 6$
	7 divides x	$\frac{x}{7}$ or $x \div 7$
	7 divided by x	$\frac{7}{x}$ or $7 \div x$

Division (continued)	The quotient of y and 5	$\frac{y}{5}$ or $y \div 5$
	The ratio of u to v	$\frac{u}{v}$ or $u \div v$
	u separated into 4 equal parts	$\frac{u}{4}$ or $u \div 4$
	5 parts per 100 parts	$\frac{5}{100}$
Power	The square of y	y^2
	The cube of k	k^3
	t raised to the fourth power	t^4
Equals	Is equal to, the same as, is, are, the result of, will be, are, yields	=
	x is equal to y	$x = y$
	p is the same as q	$p = q$
Multiplication by 2	Two, two times, twice, twice as much as, double	2
	Twice z	2z
	y doubled	2y
Multiplication by $\frac{1}{2}$	Half of, one-half of, half as much as, one-half times	$\frac{1}{2}$
	Half of u	$\frac{u}{2}$
	one-half times m	$\frac{1}{2}m$

Geometry Problems

Concept	Word Expression	Algebraic Expression
Area of a square	Side Squared	$A = s^2$
Perimeter of a square	Four times the side	$P = 4s$
Area of a rectangle	Length times width	$A = L \times W$
Perimeter of a rectangle	Two lengths plus two widths	$P = 2L + 2W$
Angles of a Triangle	The sum of the angles is 180°	$\angle A + \angle B + \angle C = 180$

Word Problem Relationships

Consecutive Integer	Three consecutive integers	$x, x + 1, x + 2$
	Three consecutive odd (even) integers	$x, x + 2, x + 4$
Motion	Rate times Time equals Distance	$R \times T = D$
Mixture	Price times Quantity equals Total Value	$P \times Q = T$
% Mixture	% Strength times Quantity equals Total Amount	$P \times Q = T$
Digits	A two digit number	$10t + u$

