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*	**×**
	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*	**÷**
	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*	$\mathbf{y^2}$
	The cube of k	$\mathbf{k^3}$
	t raised to the fourth power	$\mathbf{t^4}$
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 ½	*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*	$\mathbf{A = s^2}$
Perimeter of a square	*Four times the side*	**P = 4s**
Area of a rectangle	*Length times width*	**A = L x W**
Perimeter of a rectangle	*Two lengths plus two widths*	**P = 2L + 2W**
Angles of a Triangle	*The sum of the angles is 180^o*	$\angle A + \angle B + \angle C = 180$

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 x T = D**
Mixture	*Price times Quantity equals Total Value*	**P x Q = T**
% Mixture	*% Strength times Quantity equals Total Amount*	**P x Q = T**
Digits	*A two digit number*	**10t + u**