If you know a relationship between two or more values in a problem, you may be able to write them all using the same variable.

Statement	Math Symbols
Three consecutive numbers	$x, x+1, x+2$
Three consecutive even numbers	$2x, 2x+2, 2x+4$
Three consecutive odd numbers	$2x+1, 2x+3, 2x+5$
The sum of two numbers is 99.	$x+(99-x)=99$ The two numbers are x and $99-x$.
The sum of the squares of two consecutive numbers	$x^2+(x+1)^2$
A certain number of nickels and their value in dollars	$n, 0.05n$
Four less than triple a number	$3w-4$
A mother is 5 times as old as her son.	$5s$
Robert weights 3 kg more than Abdul.	$3+a$
A rectangle with a length 3 times the width	Length = $3w$ Width = w

Practice Run

Translate each statement into a mathematical expression.

Statement	Math Symbols
Four less than the number	
Triple the number	
Two less than double the number	
The number increased by seven	
A certain number of 5 dollar bills and the value of the bills, in dollars	
The sum of two consecutive numbers	
The sum of the squares of two consecutive even numbers	
The perimeter of a parallelogram has a length four times its width	

Compare your answers.

Translate each statement into a mathematical expression.

Statement	Math Symbols
Four less than the number.	$x - 4$
Triple the number.	$3g$
Two less than double the number.	$2h - 2$
The number increased by seven.	$x + 7$
A certain number of 5 dollar bills and the value of the bills, in dollars.	f and $5f$
The sum of two consecutive numbers.	$(x) + (x + 1)$
The sum of the squares of two consecutive even numbers.	$(2x)^2 + (2x + 2)^2$
The perimeter of a parallelogram has a length four times its width.	$P = 2(4w) + 2w$

Training Camp

B. Working with Word Problems

When solving a problem, pay close attention to what it is you are interested in finding. In order to solve a problem, you may need to determine an x-value, a y-value, a zero, a maximum, a minimum, the domain, the range, or a y-intercept. Understanding what is needed within a given context will be key to solving the problem.

All problems are different; however, some of the following strategies may help you solve problems.

- draw a diagram that represents the scenario
- write an equation or a function that represents the scenario
- list the information given in the problem
- assign variables to unknown values if they are not already stated
- formulate a strategy to determine the unknown
- verify and/or use reasoning to confirm the solution is reasonable