

# Key Words for Problem Solving

## Addition

Add
Sum
Plus
Increased by
Combined
More than
Total
Altogether
Together
Both
In all
Perimeter
And
Join

## Subtraction

Subtract
Difference
Minus
Decreased by
Left
Less
Less than
Fewer than
How many more
How much more
Take away
Remaining
Deduct
Remove

## Multiplication

Multiply
Product
Times
Of
Per
Rate
Twice
Triple
Increased by a factor
Area
Equal Groups

## Division

Divide
Quotient
Per
Out of
Split evenly
Ratio of
Half
Percent
Quarter
Share Evenly

# Key Words for Problem Solving

Symbol	Vocabulary	Equation/ Inequality	Graphical Representation
=	Equal	$2 + 3 = 5$	
	Is Same	$x + 5 = 12$	
≠	Not equal	$4 + 3 ≠ 9$	
	Is not Different	$y ≠ 10$	
<	Less than	$x - 4 < 5$	
>	Greater than	$y + 3 > 7$	
≤	Less than or equal to	$x ≤ 8$	
≥	Greater than or equal to	$y - 2 ≥ 9$	

# Key Words for Problem Solving

## Key Words for Addition

Words	Examples	Solutions
<b>increased by</b>	Jay has 5 marbles. The number of Jay's marbles is <b>increased by</b> 7. How many marbles does Jay have now?	$5 + 7$ Jay has 12 marbles.
	The number of flowers in the arrangement ( $f$ ) is <b>increased by</b> 10. Write an expression for the number of flowers in the arrangement.	$f + 10$
	There are 32 students on the field trip. The number of students on the field trip was <b>increased by</b> 8 from last year. How many students were on the trip last year?	$s + 8 = 32$ $s = 32 - 8$ A total of 24 students were on the trip last year.
<b>more than</b>	Brianna has 8 ribbons. Beth has 3 <b>more</b> ribbons <b>than</b> Brianna. How many ribbons does Beth have?	$8 + 3$ Beth has 11 ribbons.
	The number of pencils in the desk drawer is 12 <b>more than</b> the number of markers ( $m$ ). Write an expression for the number of pencils in the desk drawer.	$m + 12$
	There are 54 students in the band. The number of students in the band is 8 <b>more than</b> last year. How many students were in the band last year?	$x + 8 = 54$ $x = 54 - 8$ There were 46 students in the band last year.
<b>perimeter</b>	The sides of a triangle are 4 inches, 5 inches, and 6 inches. What is the <b>perimeter</b> of the triangle?	$4 \text{ in.} + 5 \text{ in.} + 6 \text{ in.}$ The perimeter of the triangle is 15 inches.
	Write an expression for the <b>perimeter</b> of a polygon with sides $a$ , $b$ , $c$ , and $d$ .	$a + b + c + d$
	The <b>perimeter</b> of a triangular flower bed is 22 meters. The length of side $a$ is 6 meters. The length of side $b$ is 7 meters. What is the length of side $c$ ?	$6 + 7 + c = 22$ $c = 22 - 6 - 7$ The length of side $c$ is 9 meters.

# Key Words for Problem Solving

## Key Words for Subtraction

Words	Examples	Solutions
<b>fewer than</b>	Misty has 8 stickers. Pat has 5 <b>fewer</b> stickers <b>than</b> Misty. How many stickers does Pat have?	$8 - 5$ Pat has 3 stickers.
	The number of caramels in the candy jar is 12 <b>fewer than</b> the number of jelly beans ( $j$ ). Write an expression for the number of caramels in the jar.	$j - 12$
	There are 42 buttons in the box. The number of buttons is 9 <b>fewer than</b> the number of snaps. How many snaps are in the box?	$s - 9 = 42$ $s = 42 + 9$ There are 51 snaps in the box.
<b>left</b>	Mother put 10 cookies on the plate. Rachel and her friends ate 6 of the cookies. How many cookies are <b>left</b> on the plate?	$10 - 6$ There are 4 cookies left on the plate.
	Myron has a large number of toy cars ( $c$ ) in his collection. He gave 10 of the cars to his friend Sally. Write an expression for the number of cars Myron has <b>left</b> in his collection.	$c - 10$
	The bakery had a large variety of bagels for sale on Monday morning. At noon they had sold 42 bagels and had 14 bagels <b>left</b> . How many bagels did the bakery have for sale on Monday morning?	$x - 42 = 14$ $x = 14 + 42$ The bakery had 56 bagels for sale on Monday morning.
<b>how many more</b>	The zoo has 15 elephants and 11 giraffes. <b>How many more</b> elephants than giraffes are at the zoo?	$15 - 11$ There are 4 more elephants than giraffes at the zoo.
	Ryan sold the largest number of candy bars ( $r$ ) for the school fundraiser. Brian sold 18 candy bars. Write an expression for <b>how many more</b> candy bars Ryan sold than Brian.	$r - 18$
	There are 32 cookies on a plate. The ratio of chocolate chip to oatmeal cookies is 5 to 3. <b>How many more</b> cookies are chocolate chip?	$\frac{x}{32 - x} = \frac{5}{3}$ $3x = 160 - 5x$ $x = 20$ $32 - 20 = 12$ $20 - 12 = 8$ There are 8 more chocolate chip cookies.

# Key Words for Problem Solving

## Key Words for Multiplication

Words	Examples	Solutions
<b>product</b>	What is the <b>product</b> of 4 and 5?	$4 \times 5$ The product of 4 and 5 is 20.
	The area of a rectangle is the <b>product</b> of the length ( $l$ ) and the width ( $w$ ). Write an expression for the area of a rectangle.	$l \times w$
	The <b>product</b> of a number ( $n$ ) and 12 is 84. What is the number?	$n \times 12 = 84$ $n = 84 \div 12$ The number is 7.
<b>per</b>	The cost of grapes is \$3 <b>per</b> pound. Juan bought 4 pounds of grapes. What was the total cost?	$3 \times 4$ The cost was \$12.
	Ms. Peterson needs 15 craft sticks <b>per</b> student ( $s$ ) for an art project. Write an expression for the number of craft sticks she needs.	$15 \times s$ or $15s$
	Jason spent \$35 on pizza for his birthday party. The pizzas were on sale for \$5 <b>per</b> pizza. How many pizzas did Jason buy?	$5 \times n = 35$ $n = 35 \div 5$ Jason bought 7 pizzas.
<b>twice</b>	The pet store has 6 hamsters for sale. There are <b>twice</b> as many parakeets as hamsters for sale. How many parakeets are for sale?	$6 \times 2$ There are 12 parakeets for sale.
	The number of volleyballs in the sports closet is <b>twice</b> the number of basketballs ( $b$ ). Write an expression for the number of volleyballs.	$2 \times b$ or $2b$
	There are 24 pencils in the desk. The number of pencils is <b>twice</b> the number of markers ( $m$ ). How many markers are in the desk?	$2 \times m = 24$ or $2m = 24$ $24 \div 2 = m$ There are 12 markers in the desk.

# Key Words for Problem Solving

## Key Words for Division

Words	Examples	Solutions
<b>quotient</b>	If 20 is the dividend, and 4 is the divisor, what is the <b>quotient</b> ?	$20 \div 4$ The quotient is 5.
	Write an expression for the <b>quotient</b> when the number of flowers ( $n$ ) picked from the garden are distributed evenly into 8 vases.	$n \div 8$ or $\frac{n}{8}$
	The <b>quotient</b> of a number ( $n$ ) and 9 is 7. What is the number?	$n \div 9 = 7$ $n = 7 \times 9$ The number is 63.
<b>half</b>	Misty had 10 stickers. She gave <b>half</b> of them to Monica. How many stickers does each girl have?	$10 \div 2$ Each girl has 5 stickers.
	The number of cats in the pet store is <b>half</b> the number of dogs ( $d$ ). Write an expression for the number of cats.	$d \div 2$ or $\frac{d}{2}$
	<b>Half</b> of a certain number is 18. What is the number?	$n \div 2 = 18$ $n = 18 \times 2$ The number is 36.
<b>share evenly</b>	Brianna has 15 ribbons to <b>share evenly</b> among her three friends. How many ribbons will she give each friend?	$15 \div 3$ Brianna will give 5 ribbons to each friend
	The study group has a number of note cards ( $n$ ) to <b>share evenly</b> among its 4 members. Write an expression for the number of note cards each member will get.	$n \div 4$ or $\frac{n}{4}$
	Francis <b>shared</b> her cookies <b>evenly</b> among her 5 friends. Each friend got 7 cookies. How many cookies did Francis share?	$x \div 5 = 7$ $x = 7 \times 5$ Francis shared 35 cookies.