

## Translation between English & Math

### Key Terms

Addition	Subtraction	Multiplication	Division	Exponent	Equals
sum	difference	product	quotient	squared	gives
plus	minus	times	divided by	cubed	is/was/should be
added to	subtracted from	multiply	into	the ___th power of	yields
more than	less than	twice, double	per		amounts to
increased by	decreased by	of	divide		is the same as
total	less	thrice, triple	ratio		equals
					is equal to

### Tips:

- A (the, some) number is the variable in each of the examples below.
- Don't forget when you have prepositions (of, by, from) that you include all the objects of the preposition, for example when you have "the sum of" you need to have more than one term to add.
- Keep in mind when you have "subtracted from" the phrase after from is where you start. Think about "you start from home" is similar in idea to "you subtract from \_\_\_\_\_".
- When you have the word "of", as in the "difference of" or the "quotient of", the order of the numbers matters, and you just replace the and with the appropriate operation. For example, the difference of 7 and 2 would be written as  $7 - 2$ . This is different then the difference of 2 and 7, which would be  $2 - 7$ .
- The operation of multiplication, times, product of, etc. are usually not written explicitly and is understood to be the operation between a number and parentheses, a number and a variable, a variable and parentheses or similar. Until you are comfortable, you can put in the multiplication symbol if you are unsure but I recommend \*(asterisk) not x, which could be confused with the variable.
- The term reciprocal, means the inverse, "1 over", or "1 divided by"

### Examples:

- 12 increased by a number:  $12 + x$
- 8 decreased by a number:  $8 - x$
- The product of 3 and a number:  $3x$
- The quotient of 13 and a number:  $13 \div x$  OR  $\frac{13}{x}$
- A number subtracted from 4:  $4 - x$
- Four times a number, increased by 7:  $4x + 7$
- Five times the sum of a number and  $-4$ :  $5(x + -4) \rightarrow 5(x - 4)$
- The sum of 8 and a number, divided by 5:  $(8 + x)/5$  OR  $\frac{(8 + x)}{5}$
- The product of 9 and a number, added to 12:  $9x + 12$
- Four times the sum of a number and 3 is 36:  $4(x + 3) = 36$
- Eight times the difference of some number and 7 is 32:  $8(x - 7) = 32$
- 48 times the reciprocal of a number is 3 times the number:  $48(1/x) = 3x$  OR  $\frac{48}{x} = 3x$