

Translating English in Algebra

The hardest part of solving word problems, is the translation of what was written into the algebra needed to solve the problem. Once we get the algebra equation set up it is usually easy to solve the algebra.

The first important issue in translating the problem is to read the problem carefully enough to figure out what the author is asking for. This usually requires more than one reading.

Once you understand what information is needed then you need to look at the problem to find a relationship between what is known and the unknown. Many times there will be keywords in the problem to help you find that relationship. Listed below is a partial list of the normal keywords (this is by no means an exhaustive list).

Addition

increased by
more than
combined, together
total of
sum
added to

Subtraction

decreased by
minus, less
difference between/of
less than, fewer than

Multiplication

of
times, multiplied by
product of
increased/decreased by
a
factor of

Division

per, a
out of
ratio of, quotient of
percent (divide by 100)

Equals

is, are, was, were, will
be
gives, yields
sold for

After knowing the relationship you can set up a word equation that represents the problem. My age + her age*3 = his age . And then you can change the words into variables and solve.

If the problem allows for it, one of the best ways to set up a relationship for a problem could be to draw a picture of the problem (this is not appropriate for all problems but it is good for some types)