Translating written expressions :

Equation

An algebraic expression is written using numbers and variables connected by operations. An equation is a mathematical sentence that contains expressions separated by an equal sign. When translating sentences into algebraic expressions and equations, numbers, variables, and symbols are used to replace the words and phrases within the sentence.

Spoken or written phrases and sentences can be translated into mathematical expressions and sentences using numbers and symbols. The following list show the operations that may be suggested by words or phrases.

Addition: sum, more, more than, plus, increased by, gain, exceed

Subtraction: difference, less, less than, minus, decreased by, diminish

Multiplication: product of, multiplied by, times, twice, triple, quadruple

Division: quotient, divided by, ratio, half, third, fourth, per

When the operation is addition or multiplication, the order in which you write the terms does not matter. (The operations of addition and multiplication are commutative.) When the main operation is subtraction or division, the order in which you write the terms does matter. (The operations of subtraction and division are not commutative.)

Hint: The words of "than" and "from" indicate that the order you translate the words are different than the order in which they appear in the sentences.

Translating contextual sentences :

Contextual sentences

Contextual sentences are sentences that occur in real life. They have a context to them. Several examples of contextual situations are tipping a waitress, selling items for profit, and hiring a professional to come to your home and fix something.

Example 1:

Traci bought boxes of ceramic tiles for tiling her kitchen floor. She bought a total of 210 ceramic tiles. Each box has 15 ceramic tiles. How many boxes of ceramic tiles did Traci buy?

You can write the following equations to represent this situation, where b is the number of boxes of ceramic tiles Traci bought.

$15b = 210$

Solve the equation for b.

$15b = 210$ Divide both sides of the equation by 15
$b = 14$

Therefore, Traci bought 14 boxes of ceramic tiles.

Example 2:
A copy editor charges $250 plus 80 cents a page for proofreading a manuscript. What equation expresses *c*, the cost of proofreading a manuscript with *p* pages.

You can write the following equation to represent this situation, where c represents the total cost of proofreading and p represents the number of pages that need to be proofread. The equation would look like this:

Total cost = fee + $0.80 X number of pagers
$c = 250 + 0.80p$

Caution:
Sometimes the problem is asking you to write an equation and sometimes the problem is asking you to solve the equation. Don't do anymore work than you have to so, read the problem carefully.