

Expressions

Math is more than just numbers. A better way to look at math is as language, which we can use to describe phenomena in the universe simply and precisely.

One core element in this language is algebra, which describes the fundamental rules. It is like grammar and syntax rules in other languages.

To this end, we use expressions in algebra. Expressions are values that are written in a specific way to express, what is going on.

Let me give you an example.

Let us assume that the following is happening:

I **remove** 5 apples from a basket with nine apples, but I will **put** 2 of those apples **back** again shortly after.

That is a long sentence. We could instead describe this with an algebraic expression.

9-5+2

As you can see, anything we can observe in the real world can be expressed with algebra as a set of values. We call this an algebraic expression.

There are some fundamental things to know.

- A number is a symbol, which represents a specific value.
- We can use variables to represent unknown values
- We use operators to describe actions taking place. They are like verbs in the language of algebra.
- We can use brackets to describe the exact sequence of what is happening
- Different operators have different places in a hierarchy.

Expressions and values can be compared to each other. That is what we call equations.

Let's assume that you love pastries. You go to the baker to use your pocket money to buy some.

The baker wants you to pay seven and a half pounds.

You could pay with different configurations of coins and bills, like 5 pounds, 2 pounds and 5 p, for example.

The baker does not care, he just wants his payment

Assignment:

Try and write the following sentences as algebraic expressions.

1. 4 children want to share 40 pieces of candy.
2. You buy three dozen apples.

Bonus assignment:

Find the answer

As I was going to St. Ives,
I met a man with seven wives,
Each wife had seven sacks,
Each sack had seven cats,
Each cat had seven kits:
Kits, cats, sacks, and wives,
How many were there going to St. Ives?