Transitive property

The transitive property is another term in math that is really just logic. It makes sense that if $a = b$ and $b = 4$, then a must also equal 4.

Transitive Property:

If $a = b$ and $b = c$, then $a = c$

Transitive comes from the word "transit" which means to move from one place to another. In this case we can "jump" over the middle and link the ends together, since the ends are both equal to the middle.

Example

For numbers a and b, what can we say about the relationship between a and b if both of the following statements are true?

$a = 3$

$b = 3$

We can take the equation $b = 3$ and "turn it around" (switch the left-hand side with the right-hand side), which gives $3 = b$. Now we have the following:

$a = 3$

$3 = b$

Since $a = 3$ and $3 = b$, the transitive property tells us that $a = b$.

Let's try another example of the transitive property.

Example

Consider the variables x, y, and z. Use the transitive property to write an equation that relates the variable x to the variable z, with no mention of the variable y.

$$x = y$$

$$y = 2z + 4$$

Since $x = y$ and $y = 2z + 4$, the transitive property tells us that

$$x = 2z + 4$$
