On "Cohesive" Terms vs. "Arabic" Terms

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Our present day albegra was invented by Arab "mathematicians" about a thousand years ago. In order to fully understand just how "primitive" and "backward" this invention really is, let's consider the following "thought experiment."

A teacher in Los Angeles asks, "If a number has only two factors, which happen to be equal to each other, then how shall we write a formula for their sum S?"

A student gets up and writes on the blackboard $S=2N^{(X/2)}$. Horrified, the teacher exclaims, "No! That's wrong! The sum S must be two times the square root of some number N," and writes:

$$S=2N^{(1/2)}, \ 2N^{(X/2)} = S \leftrightarrow X=1, \ \therefore \ S \neq 2N^{(X/2)}.$$

Meanwhile, in New York, another teacher asks the same exact question, and a somewhat brighter student gets up and writes: $S = 2P^{(1/2)}$. Impressed, the teacher continues, "And how do we substitute N^X for P?" The student thinks for a while, then writes:

$$S = 2N^{(X/2)}$$

"That's right!" the teacher says approvingly, "your formulae are correct."

Here we have a "dilemma" and not a "paradox." The teacher in Los Angeles says that $S \neq 2N^{(X/2)}$, while the teacher in New York asserts that $S = 2N^{(X/2)}$.

Both teachers cannot possibly be right, so, which teacher is wrong?

The truth is that neither teacher could have possibly written down the correct formula because "Arabic" terms are the only means of communication which they have at their disposal. As we shall see, such terms are hopelessly inadequate for expressing even simple formulae! Here's why:

The teacher in Los Angles asserted that the correct formula is $S = 2N^{(1/2)}$ because if:

$$S/2= (2/2)N^{(1/2)} = (1)N^{(1/2)}, \text{ then } (1)N^{(1/2)} + (1)N^{(1/2)} = 2N^{(1/2)} = S.$$

(Note that the cancellation of 2 is indistinguishable from an extraction of unity.)

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Similarly, the teacher in New York said that the correct formula is:

$$S = 2N^{(X/2)}, \text{ \underline{because} if } S/2 = (2/2)N^{(X/2)} = (1)N^{(X/2)}, \text{ then } (1)N^{(X/2)} + (1)N^{(X/2)} = 2N^{(X/2)} = S.$$

(Again, note that the cancellation of 2 was involved.)

Had the teachers known about "cohesive" terms, they would have written:

$$S/2 = (2/2)N^{(X/2)} = 2(N/2)^{(((X/2)\mathrm{Log}_2 N-1)/(\mathrm{Log}_2 N-1))},$$

which is just a "special case" of the more general equation,

$$S/2 = T(N/T)^{(((X/2)\,\mathrm{Log}_T N-1)/(\mathrm{Log}_T N-1))}.$$

Therefore,

$$S = T(N/T)^{(((X/2)\mathrm{Log}_T N-1)/(\mathrm{Log}_T N-1))} + T(N/T)^{(((X/2)\mathrm{Log}_T N-1)/(\mathrm{Log}_T N-1))} = 2T(N/T)^{(((X/2)\mathrm{Log}_T N-1)/(\mathrm{Log}_T N-1))}$$

where,

$$S = \boxed{\lim_{T\to 1}} 2T(N/T)^{(((X/2)\mathrm{Log}_T N-1)/(\mathrm{Log}_T N-1))} = 2N^{(((X/2)\infty -1)/(\infty -1))} = S \leftrightarrow X = 2.$$

(Note that the above "cohesive" terms actually prevented any cancellation of either 2 or T, and that nothing even remotely resembling the extraction of unity was ever encountered.)

Thus, the students in Los Angeles have been misled into believing that:

$$2N^{(X/2)} = S \leftrightarrow X = 1,$$

while the students in New York are mistakenly thinking that,

$$2N^{(X/2)} = S \leftrightarrow X = X,$$

while the truth of the matter remains that:

$$2N^{(((X/2)\,\infty -1)/(\infty -1))} = S \leftrightarrow X = 2.$$

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Sadly, both groups of students have no idea that the formulae which they have been taught involve infinities, and all the "circular reasoning" that goes along with them.

If we can't trust "Arabic" terms to produce a true formula involving the relatively simple concepts that we just covered here, then how can we trust them to produce formulae involving the subtle nuances of "advanced" Number Theory!?

As we have seen, "Arabic" terms are absolutely insidious in the way they are able to pervert the truth. Therefore, they must be eliminated immediately. We must develop "cohesive" terms for every mathematical need. After all, some of those students from Los Angeles and New York will go on to become teachers, and they don't deserve "Arabic" terms.