AN EXPRESSION (Estonia)

It is clear that if the values of all variables are given, the value of the expression can be computed using standard algorithms (computing the values of all members). The key to the solution is the fact that in some cases the value of the expression is computable when not all of the variables occurring in the expression are given:

1) if some other variable is equal to 0 and makes a member of the sum equal to 0:

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if (c=5) and (a=0), then ab + c = 5
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2) if the coefficients of all products of unknown variables are equal to 0:

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if a=2 then 4b - 2ab = 0
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Algorithm:

1. Consider each member of the sum separately. Replace all given variables by their values and find the product in each member.

2. Combine similar members and compute the coefficients of all the products of powers of unknown variables occurring in the expression.

3. If some of such combinations has non-zero coefficient, then UNDEFINED.

4. Otherwise, the coefficient of the empty product is the value.