−−Ping Dave, changed my mind − I am still confused

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- *From*: "The poster formerly known as Colleyville Alan" <nospam@xxxxxxxxxx>
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I thought that I had figured this out, but as the info continues to roll across my skull, the situation gets murky.

You wrote :"you have used c for several things. This is okay, as long as you don't confuse what c is. In the first case, c is a real constant in the exponential: e^(−t+c). In the second place, you have written e^(−t+c) as e^c * e^−t and then substituted c for e^c."

True, but although I was able to see why the constant c is = −1, but I now am getting confused again.

Let me use subscripts of c_1 for the initial constant and c_2 to represent e^c

Since c_2 is a replacement for e^c_1, then e^c_1 must be = −1 But e^c_1 is >0 for all c_1; even e^−c_1 is >0 for all c_1. Only using a negative e will work since −e^+−c_1 will give me a value of −1 when c_1=0

But, during the process of integration, I get ln|y| = −t + c. When I exponentiate both sides, I get |y| = e^(−t+c). Now, according to the definition of abs value, if the contents of y are positive, then |y| = y and if the contents of y are negative, then |y| = −y. Since the RHS has a positive e raised to some exponent, this value is positive and therefore y would be positive. If I had raised a *negative* e to some power, then I would say |y| = −y, but since this is a positive e on the RHS, I do not see how that is possible in this case.

I realize that the initial conditions require that c = −1 but if c_2 = e^c_1, then I do not see how c_2 can be = 0 in this case. So, even though I replaced e^c_1 with c_2, since c_2 represents e^c_1, it does not seem to me that I can simply treat it like an arbitrary constant; it is a constant, but one that is +e raised to some power of an arbitrary c_1.

Now if I have totally misunderstood this, I am very happy to be corrected :) I suspect that I am missing something obvious, but it is not jumping out at me.

Thanks for any and all help
Alan

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