

Re: exponential equation with constant

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- *From:* David W. Cantrell <DWcantrell@xxxxxxxxxxx>
 - *Date:* 02 Jun 2005 20:35:27 GMT
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quiasmox@xxxxxxxxx wrote:

[snip]

- > This solution depends on the coincidence that one exponent is exactly
- > twice the other.
- > This brings me to the question -- is there a way, other than computer
- > simulation, to solve $a \cdot \exp(-ct) = 1 - b \cdot \exp(-dt)$ for t ?

Yes.

Since this type of problem arises fairly frequently, I wrote
"Solving $A e^{(ax)} + B e^{(bx)} = 1$ " (sci.math, July 2004),

<<http://mathforum.org/kb/messag-e.jspa?messageID=3392781>>

which expresses the solution as a series.

David W. Cantrell

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- *References:*
 - ◆ [*exponential equation with constant*](#)
 - ◇ *From:* quiasmox
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