Re: int(exp(x)*erf(x),x = a .. b)

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John Creighton wrote:
> *using MATLAB 6.1.0.450 (R12.1) to access the maple*
> *kernel I don't get a solution. for:*
> *int(exp(x)*erf(x),x = a .. b)*
> *Does anyone know if this is solvable? It looks like you could do parts*
> *a few times, and then equate terms. Since:*
>
>
>>>*int(sym('erf(x)'))*
>
>
> *ans =*
>
> *x*erf(x)+1/pi^(1/2)*exp(−x^2)*
>
> *What about the integral:*
> *int(exp(x^2)*erf(x),x = a .. b)*
>
> *For this I could let u=erf(x)*
> *and do substitution. Right?*
>
> *Moreover, If I figure out how to do the integral myself, how do I*
> *teach maple to do it?*

If this is any help, on Mathematica 5.01 I get

```
In[1]:=
Integrate[Erf[x]*E^x, {x, a, b}]

Out[1]=
(−E^(1/4))*Erf[1/2 − a] − E^a*Erf[a] + E^(1/4)*Erf[1/2 − b] +
  E^b*Erf[b]
```

and

```
In[2]:=
Integrate[Erf[x]*E^x^2, {x, a, b}]
```

```
Out[2]=
(1/Sqrt[Pi])*((−a^2)*HypergeometricPFQ[{1, 1}, {3/2, 2}, a^2] +
   b^2*HypergeometricPFQ[{1, 1}, {3/2, 2}, b^2])
```

where HypergeometricPFQ is defined here
<http://functions.wolfram.com/HypergeometricFunctions/Hypergeometric2F2/>

−−Urijah Kaplan