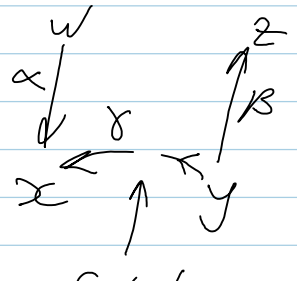
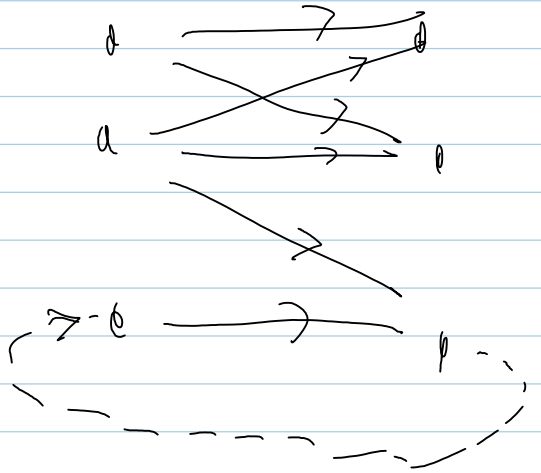
Ideas

September-24-11
5:09 PM

Perhaps I should cut open the γ-factors and re-glue later?



Question. Implement re-gluing!



Perhaps I should first totally convince myself of the case in which α, β, γ are degree 0 scalars.

A change of variables?

Given $j(x)$, can I find x?

$$J = \frac{e^x - 1}{x}$$

```
HMultiply[x_, y_, z_][mix_] := Module[
  {ξ, η, j},
  ξ = D[mix, h[x]] /. t[s_] :> c[s];
  η = D[mix, h[y]] /. t[s_] :> c[s];
  j[ξ_] := If[ξ === 0, 1, (e^ξ - 1)/ξ];
  (mix /. {h[x] → 0, h[y] → 0}) +
   j[ξ] h[z] D[mix, h[x]]/j[ξ + η] + e^ξ j[η] h[z] D[mix, h[y]]/j[ξ + η]
]
```

```
In[1]:= Solve[J == (E^x - 1)/x, x]

Solve::ifun :
  Inverse functions are being used by Solve, so some solutions
```

$J = \frac{e^x}{x}$

Seems only doable w/ a W-function.

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Solve::ifun :
  Inverse functions are being used by Solve, so some solutions
    may not be found; use Reduce for
    complete solution information. >>

Out[1]= {{x → (-1 - J ProductLog[-e^(-1/J)/J])/J}}

In[2]:= ? ProductLog

ProductLog[z] gives the principal solution for w in z = we^w.
ProductLog[k, z] gives the k^th solution.  >>
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Pensieve/Projects/w-Computations/111005 Calculator.nb

More seriously, given $j(x)$ & $j(y)$, can I write

$$\frac{j(x)}{j(x+y)} \quad \text{and} \quad \frac{e^x j(y)}{j(x+y)} \quad \geq_0$$

Not both — if I could, I could also write e^x and hence x.