

## BCH and div

June-27-12  
11:20 AM

$$j(\text{bch}(a,b)) = j(a) + e^a j(b) \quad ?$$

$$\frac{e^a e^b - 1}{\text{bch}(a,b)} \text{div bch}(a,b)$$

$$\frac{e^a - 1}{a} (\text{div } a) + e^a \frac{e^b - 1}{b} (\text{div } b) =$$

$$j(a) = \log e^a (e^a)^*$$

$$j(\text{bch}(a,b)) = \log(e^a e^b e^{b^*} e^{a^*})$$

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Question. What's  $\text{div}_x \text{bch}(x,y)$  and  $\text{div}_y \text{bch}(x,y)$ ?

$$\frac{\partial}{\partial \epsilon} \log(e^{x+\epsilon z} e^y) \Big|_{\epsilon=0} =$$

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Question. What's  $d \log(F)$  in the non-commutative context?