

```
Simplify[  
  E[\eta_1 y].E[\alpha_1 a].E[\xi_1 x].E[\eta_2 y].E[\alpha_2 a] == E[\eta_\theta y].E[\xi_\theta x].E[\alpha_\theta a]/.  
  \{ \eta_\theta \rightarrow \eta_1 + e^{-2\alpha_1} \eta_2, \alpha_\theta \rightarrow \alpha_1 + \alpha_2, \xi_\theta \rightarrow e^{-2\alpha_2} \xi_1 + \xi_2, \gamma_\theta \rightarrow \eta_2 \xi_1 \}]
```