

Pensieve header: TeXing  $\Lambda$ .

$$\text{In[*]}:= \Lambda\theta = y \eta_1 + \frac{e^{-\alpha_1 \gamma - \beta_1 \epsilon} y \eta_2}{1 + \gamma \epsilon \eta_2 \xi_1} + \frac{e^{-\alpha_2 \gamma - \beta_2 \epsilon} x \xi_1}{1 + \gamma \epsilon \eta_2 \xi_1} + x \xi_2 + \frac{a \left( (\alpha_1 + \alpha_2) \gamma + \text{Log}[1 + \gamma \epsilon \eta_2 \xi_1] \right)}{\gamma} + \frac{b \left( (\beta_1 + \beta_2) \epsilon + \text{Log}[1 + \gamma \epsilon \eta_2 \xi_1] \right)}{\epsilon} /. \gamma \rightarrow 1 /. \text{Thread}[\{ \eta_1, \beta_1, \alpha_1, \xi_1, \eta_2, \beta_2, \alpha_2, \xi_2, y, b, a, x \} \rightarrow \{ \eta_i, \beta_i, \alpha_i, \xi_i, \eta_j, \beta_j, \alpha_j, \xi_j, y_k, b_k, a_k, x_k \}]$$

$$\text{Out[*]}:= a_k \left( \text{Log}[1 + \epsilon \eta_j \xi_i] + \alpha_i + \alpha_j \right) + \frac{b_k \left( \text{Log}[1 + \epsilon \eta_j \xi_i] + \epsilon (\beta_i + \beta_j) \right)}{\epsilon} + y_k \eta_i + \frac{e^{-\alpha_i - \epsilon \beta_i} y_k \eta_j}{1 + \epsilon \eta_j \xi_i} + \frac{e^{-\alpha_j - \epsilon \beta_j} x_k \xi_i}{1 + \epsilon \eta_j \xi_i} + x_k \xi_j$$

**In[\*]:= FullSimplify[ $\Lambda\theta$ ]**

$$\text{Out[*]}:= a_k \left( \text{Log}[1 + \epsilon \eta_j \xi_i] + \alpha_i + \alpha_j \right) + \frac{b_k \left( \text{Log}[1 + \epsilon \eta_j \xi_i] + \epsilon (\beta_i + \beta_j) \right)}{\epsilon} + y_k \left( \eta_i + \frac{e^{-\alpha_i - \epsilon \beta_i} \eta_j}{1 + \epsilon \eta_j \xi_i} \right) + x_k \left( \frac{e^{-\alpha_j - \epsilon \beta_j} \xi_i}{1 + \epsilon \eta_j \xi_i} + \xi_j \right)$$

**In[\*]:= FullSimplify[ $\Lambda\theta$ ] // TeXForm**

$$\text{Out[*]}//\text{TeXForm}:= a_k \left( \alpha_i + \log \left( \epsilon \xi_i \eta_j + 1 \right) + \alpha_j \right) + \frac{b_k \left( \log \left( \epsilon \xi_i \eta_j + 1 \right) + \epsilon (\beta_i + \beta_j) \right)}{\epsilon} + y_k \left( \eta_i + \frac{e^{-\alpha_i - \epsilon \beta_i} \eta_j}{\epsilon \xi_i \eta_j + 1} \right) + x_k \left( \frac{e^{-\alpha_j - \epsilon \beta_j} \xi_i}{\epsilon \xi_i \eta_j + 1} + \xi_j \right)$$

**(Alt) In[\*]:= TeXForm[HoldForm[b + a]]**

$$\text{(Alt) Out[*]}//\text{TeXForm}:= b+a$$

**(Alt) In[\*]:= HoldForm[b + a] // Expand**

$$\text{(Alt) Out[*]}:= b + a$$

$$\Lambda = \text{HoldForm} \left[ y_k \left( \eta_i + \frac{e^{-\alpha_i - \epsilon \beta_i} \eta_j}{1 + \epsilon \eta_j \xi_i} \right) + \frac{b_k \left( \text{Log}[1 + \epsilon \eta_j \xi_i] + \epsilon (\beta_i + \beta_j) \right)}{\epsilon} + a_k \left( \text{Log}[1 + \epsilon \eta_j \xi_i] + \alpha_i + \alpha_j \right) + x_k \left( \frac{e^{-\alpha_j - \epsilon \beta_j} \xi_i}{1 + \epsilon \eta_j \xi_i} + \xi_j \right) \right];$$

$$\text{In[*]}:= \Lambda = \text{HoldForm} \left[ y_k \left( \eta_i + \frac{e^{-\alpha_i - \epsilon \beta_i} \eta_j}{1 + \epsilon \eta_j \xi_i} \right) + b_k \left( \beta_i + \beta_j + \frac{\text{Log}[1 + \epsilon \eta_j \xi_i]}{\epsilon} \right) + a_k \left( \alpha_i + \alpha_j + \text{Log}[1 + \epsilon \eta_j \xi_i] \right) + x_k \left( \frac{e^{-\alpha_j - \epsilon \beta_j} \xi_i}{1 + \epsilon \eta_j \xi_i} + \xi_j \right) \right];$$

**Simplify[ $\Lambda\theta == \text{ReleaseHold}[\Lambda]$ ]**

$$\text{Out[*]}:= \text{True}$$

In[\*]:= **TeXForm**[ $\Delta$ ]

Out[\*]//TeXForm= 
$$y_k \left( \eta_i \frac{e^{-\alpha_i - \epsilon \beta_i}}{1 + \epsilon \eta_j \xi_i} \right) + b_k \left( \frac{\beta_i + \beta_j}{1 + \epsilon \log(1 + \epsilon \eta_j \xi_i)} \right) + a_k \left( \alpha_i + \alpha_j + \log(1 + \epsilon \eta_j \xi_i) \right) + x_k \left( \frac{e^{-\alpha_j - \epsilon \beta_j}}{\xi_i (1 + \epsilon \eta_j \xi_i) + \xi_j} \right)$$