

$$\text{sol}_1 = \text{Solve}\left[u_1 = E^{\alpha c_w + \gamma c_y} a_{yz} - c_y \frac{E^{\alpha c_w + \gamma c_y} - 1}{\alpha c_w + \gamma c_y} (\alpha a_{wz} + \gamma u_1), u_1\right]$$

$$\left\{ \left\{ u_1 \rightarrow \frac{e^{\alpha c_w + \gamma c_y} \alpha a_{yz} c_w + \alpha a_{wz} c_y - e^{\alpha c_w + \gamma c_y} \alpha a_{wz} c_y + e^{\alpha c_w + \gamma c_y} \gamma a_{yz} c_y}{\alpha c_w + e^{\alpha c_w + \gamma c_y} \gamma c_y} \right\} \right\}$$

FullSimplify[u₁ /. sol₁]

$$\left\{ \frac{\alpha a_{wz} c_y + e^{\alpha c_w + \gamma c_y} (-\alpha a_{wz} c_y + a_{yz} (\alpha c_w + \gamma c_y))}{\alpha c_w + e^{\alpha c_w + \gamma c_y} \gamma c_y} \right\}$$

FullSimplify[u₁ /. sol₁ /. a_{yz} → 0]

$$\left\{ -\frac{(-1 + e^{\alpha c_w + \gamma c_y}) \alpha a_{wz} c_y}{\alpha c_w + e^{\alpha c_w + \gamma c_y} \gamma c_y} \right\}$$

$$\text{Integrate}\left[-\frac{(-1 + e^{\alpha c_w + \gamma c_y}) \alpha a_{wz}}{\alpha c_w + e^{\alpha c_w + \gamma c_y} \gamma c_y}, c_y\right]$$

$$-\alpha \left(\int \frac{-1 + e^{\alpha c_w + \gamma c_y}}{\alpha c_w + e^{\alpha c_w + \gamma c_y} \gamma c_y} dc_y \right) a_{wz}$$

FullSimplify[u₁ /. sol₁ /. a_{wz} → 0]

$$\left\{ \frac{e^{\alpha c_w + \gamma c_y} a_{yz} (\alpha c_w + \gamma c_y)}{\alpha c_w + e^{\alpha c_w + \gamma c_y} \gamma c_y} \right\}$$

$$\text{Integrate}\left[\frac{e^{\alpha c_w + \gamma c_y} a_{yz} (\alpha c_w + \gamma c_y)}{\alpha c_w + e^{\alpha c_w + \gamma c_y} \gamma c_y}, c_y\right]$$

$$\left(\int \frac{e^{\alpha c_w + \gamma c_y} (\alpha c_w + \gamma c_y)}{\alpha c_w + e^{\alpha c_w + \gamma c_y} \gamma c_y} dc_y \right) a_{yz}$$

FullSimplify[u₁ /. sol₁ /. γ → 0]

$$\left\{ \frac{a_{wz} c_y + e^{\alpha c_w} (a_{yz} c_w - a_{wz} c_y)}{c_w} \right\}$$

FullSimplify[u₁ /. sol₁ /. {α → -α, γ → -γ}]

$$\left\{ \frac{(-1 + e^{\alpha c_w + \gamma c_y}) \alpha a_{wz} c_y + a_{yz} (\alpha c_w + \gamma c_y)}{e^{\alpha c_w + \gamma c_y} \alpha c_w + \gamma c_y} \right\}$$

$$\text{FullSimplify}\left[\frac{(-1 + e^{\alpha c_w + \gamma c_y}) \alpha a_{wz} c_y + a_{yz} (\alpha c_w + \gamma c_y)}{e^{\alpha c_w + \gamma c_y} \alpha c_w + \gamma c_y} - \frac{(-1 + e^{\alpha c_w + \gamma c_y}) \alpha a_{wz} c_y + a_{yz} (\alpha c_w + \gamma c_y)}{e^{\alpha c_w + \gamma c_y} \alpha c_w + \gamma c_y}\right]$$

0

$$\text{FullSimplify}\left[\text{coy} \frac{-\left(E^\delta - 1\right) \text{cox} c[y] + t[y] \delta}{-E^\delta (\text{coxt}) - \gamma c[y]} /. \{\gamma \rightarrow 0, \delta \rightarrow -(\text{coxt})\}\right]$$

$$\frac{\text{coy} (-\text{cox} (-1 + e^{\text{coxt}}) c[y] + \text{coxt} e^{\text{coxt}} t[y])}{\text{coxt}}$$