

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

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

**FullSimplify**[ $u_1$  /.  $\text{sol}_1$ ]

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

**FullSimplify**[ $u_1$  /.  $\text{sol}_1$  /.  $a_{yz} \rightarrow 0$ ]

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

**FullSimplify**[ $u_1$  /.  $\text{sol}_1$  /.  $a_{wz} \rightarrow 0$ ]

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

**FullSimplify**[ $u_1$  /.  $\text{sol}_1$  /.  $\gamma \rightarrow 0$ ]

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