

$$\begin{aligned}
 \frac{v(t)}{4} - \frac{v(t)}{12} &= \frac{3}{4(1+2e^{-0.25t})} - \frac{9}{12(1+2e^{-0.25t})^2} \\
 &= \frac{3}{4(1+2e^{-0.25t})} - \frac{3}{4(1+2e^{-0.25t})^2} \\
 &= \frac{3 \times (1+2e^{-0.25t})}{4(1+2e^{-0.25t}) \times (1+2e^{-0.25t})} - \frac{3}{4(1+2e^{-0.25t})^2} \\
 &= \frac{3 \times (1+2e^{-0.25t})}{4(1+2e^{-0.25t})^2} - \frac{3 \times (1+2e^{-0.25t}) - 3}{4(1+2e^{-0.25t})^2} \\
 &= \frac{3 + 6e^{-0.25t}}{4(1+4e^{-0.25t}+4e^{-0.5t})} - \frac{2 + 6e^{-0.25t} - 3}{4(1+2e^{-0.25t})^2} \\
 &= \frac{3 + 6e^{-0.25t}}{4(1+4e^{-0.25t}+4e^{-0.5t})} - \frac{1 + 6e^{-0.25t}}{4(1+2e^{-0.25t})^2}
 \end{aligned}$$