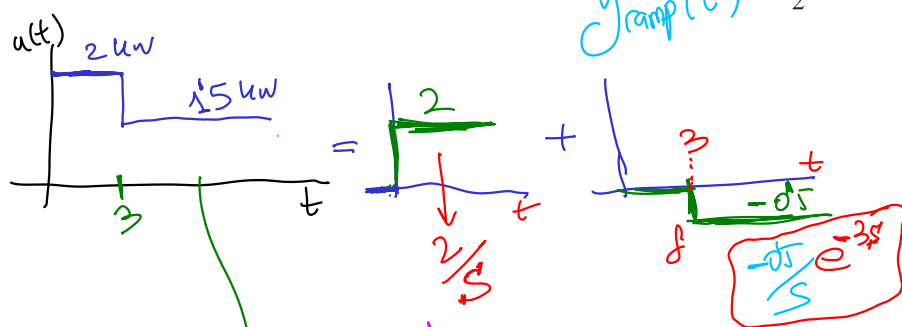


$$y(s) = G(s) \cdot v(s) = \frac{6}{(s+1)(s+4)} \cdot v(s)$$

$$y_{\text{exc}}(t) = \frac{e^{-4t}}{2} - 2e^{-t} + \frac{3}{2} \quad \checkmark 2$$

$$y_{\text{ramp}}(t) = \frac{3t}{2} + 2e^{-t} - \frac{e^{-4t}}{8} - \frac{15}{8} \quad \checkmark 4t$$



$$y(t) = 2 \cdot y_{\text{exc}}(t) + \begin{cases} 0 & t < 3 \\ -0.5 y_{\text{exc}}(t-3) & t \geq 3 \end{cases}$$

$$u(s) = \frac{2}{s} - \frac{0.5}{s} e^{-3s}$$

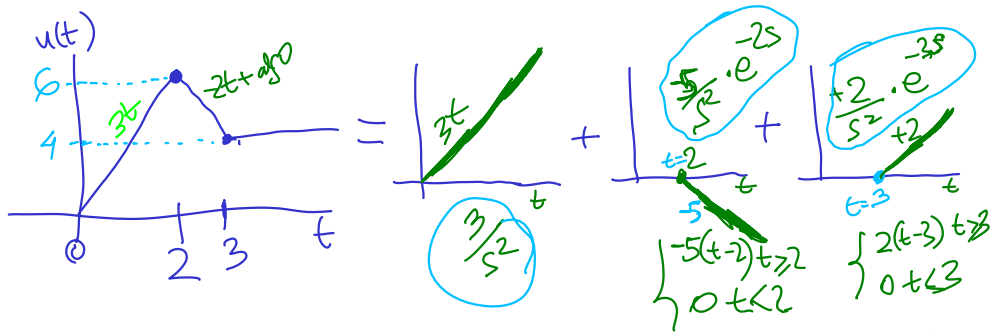
<https://personales.upv.es/asala/YT/V/pwlap1.html>

$$F(s) = \int_0^{\infty} f(t) e^{-st} dt = \int_0^{\infty} f(t) e^{-st} dt = \int_0^{\infty} f(t'+3) e^{-s(t'+3)} dt' = e^{-3s} \int_0^{\infty} f(t'+3) e^{-st'} dt' = \frac{1}{s} e^{-3s}$$

$$y(s) = G(s) \cdot v(s) = \frac{6}{(s+1)(s+4)} \cdot v(s)$$

$$y_{\text{exc}}(t) = \frac{e^{-4t}}{2} - 2e^{-t} + \frac{3}{2} \quad \checkmark$$

$$\bullet y_{\text{ramp}}(t) = \frac{3t}{2} + 2e^{-t} - \frac{e^{-4t}}{8} - \frac{15}{8} \quad \checkmark$$



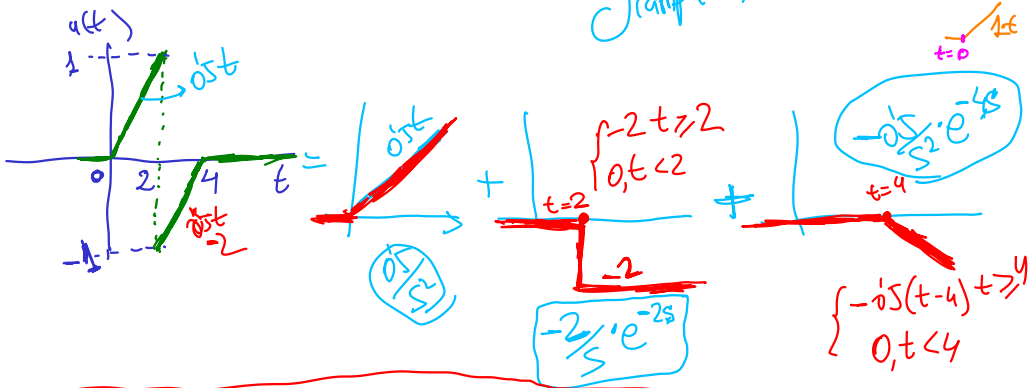
$$y(t) = 3 \cdot y_{\text{ramp}}(t) + \begin{cases} 5 \cdot y_{\text{ramp}}(t-2) & t \geq 2 \\ 0 & 0 \leq t < 2 \end{cases} + \begin{cases} 2 \cdot y_{\text{ramp}}(t-3) & t \geq 3 \\ 0 & 0 \leq t < 3 \end{cases}$$

<https://personales.upv.es/asala/YTV/pwlap2.html>

$$y(s) = G(s) \cdot v(s) = \frac{6}{(s+1)(s+4)} \cdot v(s)$$

$$y_{ex}(t) = \frac{e^{-4t}}{2} - 2e^{-t} + \frac{3}{2} \quad t=0$$

$$y_{ramp}(t) = \frac{3t}{2} + 2e^{-t} - \frac{e^{-4t}}{8} - \frac{15}{8} \quad t=0$$



$$y(t) = 0.5 y_{ramp}(t) + \begin{cases} -2 \cdot y_{ex}(t-2) & t \geq 2 \\ 0 & t < 2 \end{cases} + \begin{cases} -0.5 \cdot y_{ramp}(t-4) & t \geq 4 \\ 0 & t < 4 \end{cases}$$

<https://personales.upv.es/asala/YTV/pwlap3.html>