

**P1 Concept:** Convolution using integral formula  
**Find:**  $y(t)$  using the integral formula if  $x(t) = 2e^{-t}u(t)$  and  $h(t) = 4e^{-t}u(t)$   
**Hints:**

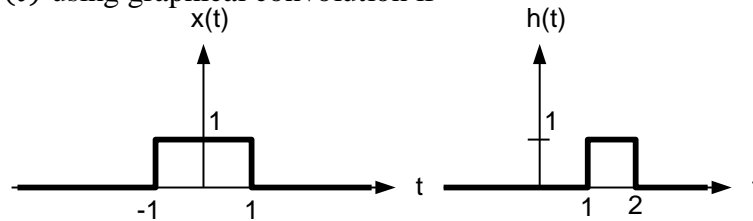
- you will have a  $t$  outside the exponential
- check your answer with P2

**P2 Concept:** Convolution using Laplace Transforms  
**Find:**  $y(t)$  in the problem above but this time using Laplace Transforms  
**Hints:** check your answer with P1

**P3 Concept:** Graphical convolution  
**Find:**  $y(t)$  using graphical convolution if  $x(t)$  and  $h(t)$  are both unit pulses (i.e. 0 everywhere except from  $0 \leq t < 1$ , where they are 1)  
**Hints:**

- consider 4 different regions, including  $t < 0$  and  $0 \leq t < 1$
- in one of the four different time regions,  $y(t) = 2 - t$

**P4 Concept:** Graphical convolution  
**Find:**  $y(t)$  using graphical convolution if



**Hints:**

- consider 5 different regions, including  $t < 0$  and  $0 \leq t < 1$
- in one of the 5 time regions,  $y(t) = t$